THE

AMERICAN FARMER:

DEVOTED TO

Agriculture, Horticulture, and Rural Economy.

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CHRISTMAS.

"No war, or battle's sound
Was heard the world around:
The idle spear and shield were high up-hung;
The hooked chariot stood,
Unstained with hostile blood;
The trumpet spake not to the armed throng;
And kings sat still, with awful eye,
As if they surely knew their sovereign Lord was by."

JANUARY.

"When now, unsparing as the scourge of war,
Blasts follow blasts, and groves dismantled roar,
Around their homes the storm-pinched cattle lows,
No nourishment in frozen pastures grows."

Farm Work for the Month.

We enter now upon the duties of the new year, with the experience of the past to instruct us, and with fresh expectations, and new hopes. The engagements of the future will command our best attention. The plan of operations for the year must be thoughtfully considered, and carefully arranged. Determine what crops are to be cultivated, the extent of ground to be allotted to each, and its particular location. Avoid especially, under the present uncertainty of labour, the evil of over-cropping. Ascertain what amount of foreign fertilizers must be added to your home resources, and arrange for their supply in due season. Examine all implements, supply what is wanting, and make repairs when needed. Look carefully to your accounts of the past year, and start with the determination to have them kept strictly the coming season.

If you have not yet done so, take an inventory of the personal effects necessary for carrying on the farm. Have horses, cattle, hogs, sheep, implements of every description valued at their cash value—also the crops on hand. Have your farm and improvements put at their cash value, and require that they pay you six per cent. interest, and the personal effects ten per cent., after paying all necessary cost of labour, feeding, &c., for the year. It is very advisable too, to keep accounts with separate crops, and with the different kinds of stock, that you may determine, at the close of the year, which has paid you best. Such accounts will give an important insight into the business of the farm, and prove of inestimable value if properly kept, and adhered to for a sufficient length of time.

WHEAT FIELDS.

If the wheat fields have been infested with the fly during the fall, it will be advisable to graze closely with sheep and other stock, during frozen weather. Keep water furrows well opened, that excess of surface water, which causes so much winter killing, be avoided.

TOBACCO CROP.

Continue to "strip," whenever the weather is suitable, look to the careful handling of the bundles when tied, as well as the proper assortment of qualities, and despatch the work of preparation for market. Get in readiness material for hogsheads. The timber for hoops should not be cut until about to be used, as it will not work so well.

SOWING SEEDS.

Tobacco seeds may be sown whenever the ground can be got in good order, and this not unfrequently occurs in the month of January. When this is the case, the opportunity should not be lost. The burning of beds is a laborious

Mr Grant

and expensive process, and since the use of guano has been found to be a substitute for it, has been very much dispensed with, unless the necessary burning material is abundant and near at hand. Guano (the best Peruvian) is used at the rate of 800 to 1000 lbs. to the acre, and the preparation of the ground is made as thorough as possible without burning. It is chopped in, mainly, during the hoeing of the ground, a light dressing being put on in immediate connection with the seed. When brush is to be used for burning, have it cut early, and got together, to avoid delay when the ground comes in order. If guano be not used, a good compost of stable and other manures well rotted, and free from grass seeds, should be chopped in at seeding time. Get this compost in readiness now. An experienced planter, of St. Mary's county, top-dresses his bed, when ready for sowing, with the freshest stable manure—wheat straw alone having been used in the horse-racks—and sows the seed on top of this dressing.

STOCK.

Give stock of every description the best care. Sows becoming heavy with young, should be separated from other large hogs for fear of accident. As ewes approach the lambing season, see that they are kept well up in flesh, though they need not be fat. Let them have a little grain if necessary. Fill up deficiencies in your working stock. Look to it that young hogs have no opportunity of lying in heaps of fermenting manure.

WORKING IMPLEMENTS.

Keep them, of every description, out of the weather. If you have not heretofore prepared proper shedding, or house room for everything, see now the necessity for doing it, and use the present leisure for the purpose. Have gearing, of every sort, overhauled, repaired, and occasionally greased. Give blades of scythes, the knives of reaper and mower, and everything about your agricultural machines or implements that is likely to suffer from rust, a thin coating of grease and beeswax, melted together. Have ice-hooks, leather mittens, saws and axes, all ready for a speedy gathering of the ice crop.

CLOVER FIELDS.

Be sure to protect these from the hoofs and noses of intruders. Let nothing touch them, till the proper grazing season come.

FENCING AND WOOD.

Have full supply of wood for next winter cut and corded. Cut early, all the fencing material that may be needed.

PLANTING TREES.

If trees are to be planted in spring, take any opportunity of the ground being in order to dig the holes; the earth will be the better for exposure to frost. Set stakes near trees planted out in autumn, and fasten the trees to them with ropes of straw. Turn over all piles of weeds, and other trash, and kill the field mice you will probably find there. Fill a bag with straw for a cushion, and go on your knees, with knife and probe, to hunt out the destroyers of your peach trees.

MANURES.

Gather from every source, material for manures. Save very carefully, and compost the rich manure from the pens where your hogs were fattened. See that the spouting around your farm pen takes the water well off, without carrying a strong solution of the manure.

LIME AND ASHES.

When these are needed, and can be obtained, get them, and spread at once upon the surface of any ground you propose to apply them to. Lands to be ploughed for spring crops, however, need not be dressed before ploughing.

The Vegetable Garden.

Prepared for The American Farmer, by DANIEL BARKER Maryland Agricultural College.

JANUARY.

Drain! drain! drain! These words should be repeated again and again in every agricultural and horticultural journal and magazine, throughout the year. We believe that about nine-tenths of the diseases of fruit trees, the non-production of strawberries, raspberries, &c., the ravages of the potato disease, &c., are the results of a *water-logged condition* of the ground, during the fall and spring months. The crops are planted in the midst of damps, we were going to say swamps, and taken up after the fall rains have soddened the produce. So by canker, and moss, on fruit trees, abundance of bloom but *no fruit;* a cold state of the ground in spring, which renders it impossible to raise the early vegetables, fruit, &c., and a general failure accompanied with mildew, and an unsatisfactory condition of almost everything grown. "These things ought not so to be."

If, therefore, any part of the garden be wet, drain it *effectually*, making the drains from 2½ to 3 feet deep, and from 15 to 20 feet apart, according to the nature of the soil; use tiles, and place six inches of brick ends or stone upon them, as

stated in article upon "renewing orchards," in November number of *Farmer*, page 136.

CAULIFLOWERS.—Give all the air possible to the plants in frames. Watch for mice, and see they do not injure the hearts of these plants as they are very likely to do during the winter months.

ASPARAGUS.—Whenever the weather may permit, make preparation for new plantations by marking out the ground, and trenching from 20 to 24 inches deep. A light, sandy loam is the best soil for asparagus, and a soil almost wholly sand is better than one most wholly clay, because when highly manured the sand will suit it admirably, but without plenty of manure will be useless. In a deep, fertile loam, a moderately heavy manuring will suffice, the manure being well mixed with the soil, and under all circumstances have the ground well drained. If no other than a clay soil, lay on six inches of sand, and spade it in to a depth of twenty inches, mixing it well with the soil, letting the ground remain in that state for three weeks; then spade again and manure liberally. If it be intended, merely to sow for transplanting, a good manuring, one full spade deep, will be sufficient.

CABBAGE.—Young plants are apt to die off unless kept dry; a little dry sand, and wood ashes, will be useful to sprinkle amongst them where they are suffering from damp. If the plants are too crowded they will kill each other; it is best to thin at once if necessary.

LETTUCE—On protected borders and in frames. See that they are properly protected and looked over upon all favourable opportunities, removing all decaying matter, and covering up when the weather is very severe; keep the surface about them constantly stored whenever it is sufficiently dry.

HORSE-RADISH.—Make plantations of this neglected but useful plant, in deeply trenched and well-manured soil, if you would have it fine.

MANURING should now be proceeded with, and plots marked out. Get ready for sowing as soon as weather permits. Take advantage of every open day to push on all kinds of out-door work. Plow and ridge up vacant ground to the frost. During frost, empty manure pits, wheel out manures, and when the ground is not too hard frozen, turn over the plots that have been spaded up to expose a new surface to the frost. When ground work of all kinds is suspended through severe weather, jobs may be found in repairing fences, buildings, wet bed soil, clearing up rubbish, collecting material for walks and roads, burning weeds, refuse, &c.

The Fruit Garden.

Whenever the weather is open and dry, plow, dig, and trench up all vacant ground which has not been done during the fall months, or any that may have been cleared of crops. In frosty weather wheel dung on plots intended for planting during the spring months. It is very important that all operations that can be performed this month should be completed, as the two following will each bring their own cares, and require all the labour and care which can be bestowed on them. Attend to all plants which may suffer from frost. At the end of the month prepare dung for wet beds, to be ready against the next month. Cut the dead wood out of raspberries and blackberries; prune currants and gooseberries. If any fruit trees, grape vines, &c., remain to be planted in spring, they should be looked after the first favourable opportunity. If it is worth while to occupy the ground with fruit trees, and incur the expense of planting them, it is certainly worthy of serious consideration whether the ground is in the best state of preparation for being planted with fruit trees, and to incur the expense and trouble which may be requisite, in order to render the ground as suitable as can be made for the kind of tree with which it is to be planted.

To do this is seldom a work involving much direct outlay, for if the ground be well drained there is little else required except labour. It will prove a great disappointment to plant trees where there is not a fair prospect of their doing well, and be it remembered that it can be much more conveniently, cheaply, and efficiously made, previous to planting.

The Flower Garden.

Time's stream flows on—now fast, yet fair it flows;
How sweet life's flower upon its margin grows;
And he who plucks its tender blossom here,
Gathers with hope, yet touches them with fear,
Will find their fragrance and their bloom will last,
When the fair bounds of fading earth be past.

ANNUALS sown in boxes towards the end of the month, and placed in a green-house or frame where frost is excluded, will make a good start for early bloom; the seeds should be sown thinly, the boxes or flower-pots have plenty of drainage, and a light, fibry soil should be used. Mignonette is one of the most useful to sow now, as it will come into bloom by the time the weather is sufficiently genial to allow of the pots being placed in windows. The beautiful varie-

ties of "Phlox Drummondii" offers the gayest flowers for early display in the green-house, sitting, and drawing rooms.

BULBS.—Of hyacinths, tulips, crocus, &c., pushing the ground, should be covered by short manure some two or three inches deep.

FUCHSIAS should be looked over, and those wanted to bloom early should be re-potted and placed in a warm, light part of the green-house or window.

AZALEAS AND CAMELLIAS.—Take care that they have enough water, and, as the blooms open, remove them to a cooler atmosphere, to prolong the blooming.

EVERGREEN SHRUBS had best not be transplanted, or in any way disturbed for the next three months. We prefer not to remove them till April or May. Where hardy shrubs have become unsightly through the loss of the lower branches, layering may be practicable whenever the weather permits. The operation is a very simple one; draw down a suitable branch and peg it to the ground to mark where the tongue should be cut, then enter the knife on the under side and make an incision half through the wood, and turn the knife towards the tip of the shoot, and cut a slit an inch long; remove some of the soil and peg the branch down with a peg inserted in the cut to keep it open, and peg it down firm, covering the tongue two or three inches deep with soil. It will, during the summer, emit roots, and may be left to produce new growth for the purpose of increasing the bulk of the specimen, or be removed to form an independent plant.

PITS AND FRAMES.—These should be well protected in severe weather, and abundance of air be given to ten week stocks, mignonette, pansies, violets, &c. The early potted tulips and hyacinths under sashes, &c., will now begin to grow, and should be removed to the cold pit, or frame, for a short time previous to placing them in a higher temperature.

THE WHEAT CROP IN EUROPE.—Returns from one hundred localities in England show that the wheat crop for the present year is an average one in ninety-six cases, over an average in twenty-one, and under an average in sixty-three places. In a word, the crop is deficient about a fifth in both England and France. In Germany about an average; same in Turkey. In Russia it is a great crop, and far above an average, but whether to make the crop an average throughout Europe is doubtful.

Hardy Herbaceous Plants.

ADAPTED FOR THE GARDEN OF THE FARMER.

No. 1.—PERENNIAL PHLOXES.—There are few hardy, herbaceous flowering plants, superior, or equal, to the improved varieties of phlox decussata, combining, as they do, fragrance, beauty, and size of flower, with a richness and variety of colour scarcely surpassed by any of the many beautiful varieties of hardy, herbaceous plants; they are also gifted with a hardihood that enables the most delicate of the new and improved varieties, with very slight protection, to withstand the rigor of our winters with impunity; they are also very readily propagated by the young shoots in spring; they are also readily multiplied by division of the root when from one to three years old. The phlox delights in a light, loamy soil, with a moderate coat of leaf mold. I would here observe one marked feature in the successful treatment of them, which increases very materially these large heads of flowers, as also the well-being of the plant generally. They should at all times be in a position where they are shaded from the mid-day sun, as from the very delicate texture of the petals they are very readily scorched. In the February number of the *Farmer* I will give a list of a few of the best, from notes, when in flower, upon the unique collection of Mr. John Saul, Washington, D. C.

HOG CHOLERA.—The veterinary editor of the North British Agriculturist recommends the following treatment.

As the disorder is so rapidly fatal, remedial measures are seldom of much avail. The stomach and bowels should be unloaded if the pig is tolerably vigorous, by an emetic of sulphate of zinc; a dose of castor-oil should afterwards be given: and if there is pain and scouring, the physic may be united with a little laudanum. A warm, comfortable, clean bed is essential; the diet should consist of milk and water, or well boiled gruel. We have seen little pigs benefited in the earlier stages by a warm bath; spirits and water, or ammoniacal stimulants, should be freely used to sustain the failing strength. The prevention of cholera will be effected by cleanliness, comfortable housing, and proper diet, avoiding especially all putrifying food and filthy water.

A SCOTCH farmer finds by measurement that his cattle drink over twenty-five pounds of water each day.

For the "American Farmer."

Curing Broom Corn.

My attention has been called lately to an article on "the culture, harvesting, and fitting for marketing broom corn." The writer gave such minute instructions that nothing more need be added. But in the curing he says: "The brush is taken into an open, dry house, and spread upon slats to dry. It is turned from time to time, and if the weather is good will dry out and cure in a couple of weeks. * * * In all the operations with the brush before it is cured, care must be taken that it be not piled together in any considerable quantity so that it will heat, since that would destroy the color and injure its sale."

What a world of trouble is involved in all this. Now can it not be cured artificially as it comes from the field, even though wet from rain? I believe it can. Heat alone will not do; that has been tried; it parches the straw and makes it brittle. But a strong current of warm air, meeting the brush first at a low temperature, and gradually increasing to a higher degree as it parts with its moisture is quite a different matter, and exactly suited to the purpose. Such is the drying tunnel, advertised in this paper.

Imagine a tunnel built on the surface of the ground, of brick, or of lath and plaister, eight feet wide, seven feet high, and in length from fifty to one hundred feet, according to the quantity to be dried in a day. It is fitted with a double track of railway and train of cars. Over the entrance is a chimney twenty inches square, and twenty feet high, made of four boards nailed together. Near the exit is a furnace throwing hot air into the tunnel, thus creating a strong current, in fact, a warm, windy, summer's day intensified. The degree of heat is regulated by a thermometer. I find that 135 degrees is enough for fruit and vegetables, and you will remember the beautiful, dried peaches, and green corn, that I brought to you in October, 1860, cured in twenty-four hours, and a specimen of inch boards, green from the log, seasoned in forty-eight, it having lost sixteen per cent. the first day, and four per cent. the next. This is the utmost that the brush can require, and if a second day be necessary, in order to keep the work going you have only to widen the tunnel to receive another track, and perhaps add something to its length.

The process is very simple. The first day is occupied in filling the tunnel; after this, as a loaded car is entered, a dry one is taken out and immediately passed to the press.

Will one of your correspondents describe the machine used for stripping off the seed, the price for those driven by horse-power, and also by hand, and where they can be procured—none are to be had in Baltimore. Your patrons on the Eastern Shore will engage largely in the culture next year, and want all the information you can give.

A gentleman in Northampton, Va., planted this year, sixty acres in broom corn, and was offered $3000 for it as it stood but refused. There came a rainy spell after he had housed it, and mildew was the consequence, which reduced its value one-half. This would have been prevented by the tunnel. FRANCIS H. SMITH.

For the "American Farmer."

Feeding Stock in Winter.

EDITORS AMERICAN FARMER: In your last number I notice Major George Taylor's mode of feeding bullocks. Years ago I kept a large dairy, (120 cows.) My stables were arranged in such way as to allow the manure to remain in them for three days. Twice a week the manure was hauled by teams from the stable to the field, and spread behind the wagon. During the cleaning of the stables, ten cows at the time were let out to the water, remaining out-doors about twenty minutes. The other days the cows were watered in the stables, by letting water run in their troughs. On cleaning days I always had considerably less milk; this showed me that cows lose milk by being exposed to a colder temperature than that of the stable. It is an absolute requirement for cows, and also other cattle, to be kept in a uniform temperature, as any sudden change affects them. (Cows will even give more milk if they get lukewarm water to drink, as they thereby are induced to drink more, and the more a cow drinks the more milk she will give.) The proof of this I had by altering my method and cleaning the cow-stable every morning, without letting the cows out; since then I keep my cows in the stable from the day they are put up until the day I let them out on grass. A cow stable can hardly be kept too warm, *provided* there is a proper ventilation *above*. The same is the case with fattening hogs, whereas the horse stable has to be kept at a much lower temperature, say 55 degrees. The cow stable will not be too warm at 75 degrees. To give cattle dry meal I also cannot approve. It certainly is an established fact, by the experience made in different countries, that meal, mixed with cut hay, straw, or chaff, scalded with hot water, has a far greater fattening and milk-giving property than raw meal; besides, it induces the cattle to

eat hay, straw, or chaff, in larger proportions than if each is fed by itself. Even if the straw or other inferior feed does not increase fat or milk, still it is necessary to fill the stomach. I acknowledge, that feeding as above, gives more trouble and requires more attention from the farmer himself, but he is amply paid for it by the better thriving of his stock and the less quantity of food he uses.

"Keep your cattle through the winter in an even and warm temperature, well-ventilated; keep them clean, give them nothing but chopped food, well scalded, (except at night a little hay or straw,) and I will guarantee your success in fattening and milk production.

L. A. HANSEN.

Clifton, Fairfax county, Va., Nov., 1866.

From Edinburgh Journal of Agriculture.

On Ventilation as Affecting the Health and Feeding of Animals.

The quantity of carbonic acid present in the atmosphere exists just in sufficient quantity to supply food to plants without inflicting any injury to animals; but whenever it acquires considerable increase in confined apartments, it becomes highly noxious to every breathing creature. Carbonic acid is given out largely by every animal, not only by the breath, but by the exhalent pores of the body. It is also the product of combustion of wood, coal, or any other fuel, and of decomposing straw, litter, or vegetable matter. Although Carbonic acid gas is beneficial to the stomach, and constituting one of the principles of wine, and every vinous beverage, and existing as a most wholesome ingredient in the water we drink, it is nevertheless a deadly poison to the lungs, unless largely diluted with atmospheric air; and when we are aware that a human being emits through the lungs and the pores of the skin no less than 40,000 cubic inches of carbonic acid gas every day, we will readily see the importance of attending to the proper ventilation of all buildings, whether for the abodes of human beings, or that of the lower animals.

Certain other gases are constantly emitted from the bodies of living animals, in the form of exhalation or insensible prespiration, and are the products of useless, injurious, and rejected portions of their food and organism, and which are thrust out of the system in a manner strictly similar to excrementation; and act more or less poisonously on every species of animal, but most of all on individuals of the same species as those by whom they were emitted.

The chief of these gases are sulphuretted hydrogen and phosphoretted hydrogen, and also ammonia, substances constituting in a high degree animal fetor.

It is a remarkable fact that hydrogen gas, the lighest of all known substances, quite colorless and odorless, and an antiseptic, should nevertheless be one of the compounds generating putrid disease. Sulphuretted hydrogen is a union of hydrogen gas with sulphur; it is an invisible gas, heavier than common air as 36 to 30, and so dreadfully poisonous that one part of it mixed with 249 parts of air would destroy a horse, if breathed by that animal. It is known that some individuals give out so large a quantity of this gas as to destroy white paint. Its odor, when inhaled by itself, is that of rotten eggs, it being to the emission of sulphuretted hydrogen these owe their odious stench. Hydrogen and phosphorous form several combinations equally offensive. The phosphoretted hydrogen is a transparent colorless gas, having, when free, an odor resembling putrid fish. Ammonia is largely generated in all animal bodies, and plays an important part in the dangerous action of animal exhalations upon the human frame. The constituents of ammonia are hydrogen and nitrogen, and the latter of these is the immediate agent of all decomposing action upon organized matter, from the first vinous fermentation decomposing sugar, to the putrid carcass. Nitrogen acts as a ferment upon all dead vegetable or animal matter, which once in a state of decay or putrefaction, communicates its condition not only to any other dead matter in contact with it, but to living beings within its influence, often producing those dreadful fevers and putrid sores which in all large towns sweep away so many human beings every year, and, in some other countries, generates even more horrible diseases than are at all known in this country.

The awfully sad and fatal effects of the crowding of human beings could be ten times multiplied, by alluding to the abodes of many poor and wretched families, which from want of ventilation are little better than the abodes of death; and to many crowded assemblies, the atmosphere of which is of the most dangerous nature, where, besides the exhalations of healthy persons, there is also that of those actually diseased, and also the fumes of half digested ales and spirits, with the odor of tobacco, &c., sufficient to generate disease even in the most robust and healthy. A knowledge of such facts has been the means of directing the attention of architects and others to discover a more improved system of ventilation in human dwellings and public assembly rooms. Much yet remains to be done for the abodes of

the poor, and also much requires to be done in the abodes of the lower animals, for precisely the same laws apply to both. And when we consider the crowded state in which most of our domesticated animals have to exist, especially during winter seasons—in too many cases imbedded, as it were, in their own excreta, and without the slighest regard to ventilation—need we wonder that a typhoid and pestilential disease should exist? Seeing that such is the case, and that as yet certain of these maladies prove more than a match for all the veterinary art of Europe, we may well inquire, is our ventilation perfect? Is it possible that foul air, and fermenting dung and urine, and other vegetable and animal matter, together with currents of air highly impregnated with poisonous gases, rushing from underground drains and sewers, could be the united means of generating deadly pestilence? Opinions are divided; and although it is quite true that many of the most filthy and worst ventilated of all our towns' dairies escaped, it is no proof whatever that the cattle plague did not first orignate in such places. "Pleura" for a good many years back has been pointing directly to the filth and want of ventilation which exist in town dairies generally, not one in ten of which has been clear of "pleura" for many years; but from the fact of a well-conditioned animal being marketable even in an advanced stage of this disease, it has been much less disastrous, and public attention has been little directed towards it. But in "rinderpest" we have got a remembrancer—a lesson taught at a fearful cost, not only to owners of cattle, but to the nation at large. And the question of ventilation and cleanliness will more than ever force itself on all intelligent minds, and particularly on those who are owners of stock. Having this in view, we have been induced to note down some of our own ideas in regard to the ventilation and drainage of farm offices, in many of which no artificial means whatever have been used, and in some natural outlets very much interfered with. In the generality of buildings a hole below the door, or an open window some two feet from the ground, as inlets, and another hole at the animal's nose, and in the very best arranged, an opening in the roof as outlets for foul air, complete the ventilation of the present state of improved farm-buildings. One moment's reflection will point out the fallacy, nay danger of such an arrangement. In the first place it will be necessary to consider what the foul air we have got to deal with consists of. The chief element, we know, will be carbonic acid gas, given forth by the breathing of the living inmates. Besides this poisonous gas we have a few more still more poisonous. These latter arise chiefly from fermenting urine and excreta, foul drains, &c., and will consist of ammoniacal sulphurretted hydrogen, and phosphorretted hydrogen gases. All these gases are most poisonous, but particularly so to those animals from whom they are given forth. It is generally believed that foul air is lighter than pure or atmospheric air. This, however, is by no means the case. At least we know that carbonic acid gas is one-half heavier than common air when both are of the same temperature. All gases, however, as well as common air, expand with heat, and condense with cold, so that carbonic acid, as produced by the breathing of animals, will be at a temperature which will admit of its rising even in a volume of common air, and hence the advisability of providing an outlet in the roofs of buildings to admit of its escape. The other foul and more dangerous gases will naturally rise from the floors of the buildings, from the fact of their being generated by fermenting urine and solid excrement, foul drains, &c. They are all in union with hydrogen, which, by itself, is upwards of 14 times lighter than common air, and these will, of course, quickly rise. Our chief attention, therefore, ought to be directed to the creation of a current towards the roof, but of course as much out of the way of the animals as possible, instead of past their noses, as is generally the case; and in order to carry out this most effectually there would require to be funnels inserted in the roof, instead of mere openings; these funnels to be not less than four to eight feet in length, according to the height of the building, and from two to four feet wide at their base, tapering towards the top. They might show about one foot outside the roof; to have one side open, and constructed so that the portion of the funnel shown outside would turn by a vane, keeping the opening always to the lee side, which would not only favor the outlet of the air, but would also prevent snow or rain from being driven in.

It is obvious from what has been said, that a strong current of air could thus be maintained on all occasions, and would, no doubt, require to be regulated by a valve at the upper end of the funnel, to be wrought from below by a cord, as at times a stronger draft might be produced than was necessary. Next may be noticed the openings required for the admission of pure air. It would not be advisable to have these inserted at a lower elevation than the extreme height of any animal likely to be kept within the building, which would prevent the possibility of such animal being exposed to the draft or current.

At the same time the current would certainly gradually draw off the light and heated air which would be found surrounding the warm bodies of the animals, and the vacuum at once would be filled up by a portion of the cool and heavier air which had just been admitted. And by having the building quite shut up below, all extremes of temperature could be avoided. The advantage of this mode of ventilation will be at once seen when compared with the prevailing custom of admitting fresh air by openings in the door or lower part of the windows, whereby some of the animals must stand in a cold draft, otherwise some will be overheated, breathing the same poisonous atmosphere over and over again. A most reprehensible practice all but universally prevails in stables of having openings in front of each animal, when a current from below the door, or some such opening behind the animals, is kept up, carrying every foul gas generated in dung and urine forward to the noses of the animals, as if such were necessary as agents of health. This cannot be too much condemned. It is evident that the poor animals thus live in a constantly poisonous atmosphere, which must be prejudicial if not dangerous to health. Nothing—wholesome food excepted—can tend more to promote the health and vigor of animals, preventing very much all attacks on the lungs, and all diseases of a typhoid nature, than an abundant supply of pure and fresh air. It is important to have a perfect system of drainage in connection with farm-buildings, otherwise it is impossible to get the benefit of pure air, as the surrounding atmosphere will be less or more surcharged with the gaseous vapors arising from stagnant water run from the roofs of the buildings, and afterwards filtered through the dung courts, occasioning two-fold mischief by washing out the most soluble and valuable portion of the manure to be evaporated as a deadly gas. This, and the most dangerous of all gases which escape from badly working drains and sewers, ought to be at once attended to by farmers or others in charge of stock and buildings, otherwise it is impossible to have pure air in or about farm-buildings, whatever mode of ventilation exists; and the serious loss in manures is scarcely less important. It will, no doubt, be many years yet before all our homesteads are roofed in, although such a proceeding would be one of the greatest improvements that could well be carried out in connection with the comfort of farm-buildings, and the proper management or making of manures.

Every farmer, however, can have proper roans or spouts along the eaves of all his buildings, so that every drop of roof-water may be carried off, and by proper attention to levelling and packing of the dung-heaps, so as to prevent fermentation, and a slight covering of gypsum applied now and again over the whole heap, and daily over the floors of byres and stables, piggeries, &c., would cause every gas valuable as a manure, yet dangerous in the atmosphere, to be fixed; and become ever after an inseparable ingredient in the manure; and the whole premises would thus be kept clean and sweet, and much of the very pith of the manure saved for its legitimate use.

From McClure's American Stable, Field and Farm Yard.

Abortion in Cows.

Abortion.—This is the coming away of the calf, at so early a period, and before it is perfectly formed and matured, that it cannot live, and occurs at any time from conception, to within a few weeks of the full time of calving.

Causes.—The frequency of abortion, the apparently epizoötic form which it sometimes assumes, together with the immense loss which thereby occurs to the farmer, and through him to the country at large, makes the *cause* of abortion in cows one of the most vital of subjects. The theory of *sympathy*, which some authors and farmers favor as a cause of abortion, is not to be entertained for a moment by any one having any pretension whatever to a knowledge of physiology, and the pathological anatomy of cattle. I have known a whole herd of cows, with but one or two exceptions, *abort*, and yet not one of those cows ever saw one another. Some of those cows came from the State of New York, and yet they were kept separate from those already upon the farm. The owner had for this cause, and for the second time, sold every cow on his farm. The first herd of cows, however, were allowed to associate with one another. The second herd was, as has been already stated, kept separate, but fed upon the same grass and hay, the produce of the same farm. So much then is this against the theory of sympathy, not to speak of the utter impossibility for a cow to possess a power wisely withheld and denied to the higher and lower orders of animal kingdom. For if this were not the case, how long could we be assured of the perpetuation and continuance of our own race, and of other species in the animal world?

Having thus denied the possibility of sympathy as a cause of abortion, let us now inquire what are the more *immediate* causes, and after which we will endeavor, as best we can, to elucidate the more *remote* causes. The *immediate* causes of

abortion are the separation of the appendages and attachments of the calf from the womb, and the contraction of the womb itself, whereby the calf is expelled to the outer world. The *remote* causes of abortion are few, and we will state them in the order of their importance. First, and by far the most important, and the one which is most likely to produce abortion in an epizoötic form, is weakness and debility of the cow. This debility is the result *of irritation* of the fibrous, serous, tissue of the body, occurring at seasons of the year, which generally produce, and gives rise to coughs, colds, and throat diseases. Hence, the epizoötic form of abortion, so often seen, and attributed to sympathetic causes. This irritation and debility is of frequent occurrence, and is so insidious in its character, that even those persons most about the animals are not aware of anything being amiss with them. This is not strange, for we have heard, read and seen animals in the worst forms of pleuro-pneumonia, and nobody thought of, or had seen anything wrong, worthy of observation or remark. It is but the other day, one of the papers of Philadelphia announced that a certain farmer had lost $1500 in a week or two by the death of some cows which were not thought to be sick. It is only the true medical man who can estimate aright the consequences of even slight irritation of the white membranes of the body. In this connection, it may be well to state, that cows in calf are more susceptible of debility than cows which are not in calf, for the simple reason that a great quantity of blood is required for the growth and maintenance of the fœtus.

This fact goes far in destroying that which nature so strongly endeavors to make perfect, or in other words, nature in this case defeats her own ends. Debility from the cow being in calf, and from the irritation of the shining membranes of the body, more especially of the windpipe, are the true causes of epizoötic abortion in cows. The solids of the body become relaxed, soft and flabby, the placenta, or calf attachments separate from the fundus of the uterus, and the death of the calf from starvation, it is then a foreign body, the womb contracts and expels it, and this is called abortion. Farmers and others should not deceive themselves by thinking that when a cow is fat she is not weak nor out of order. Cows of this description are most likely to be the victims of irritation of the throat, and its train of consequences. Having thus defined what I believe to be the true cause of epizoötic abortion, and which will, I think, upon fuller investigation of the subject be fully borne out, I will now speak of the causes of *sporadic* abortion, or abortion occurring in single or isolated cases. A cow may or may not *abort* after having suffered from an accident or injury, which will depend whether the calf or womb has been injured. A kick from a horse, or a gore from another cow, is often the cause of abortion. The eating of diseased grass seed is another cause of abortion, but not so much, nor so often the cause as many persons suppose. For a cow will readily and without injury, take one ounce of the strongest and best ergot of rye to be found in the market; now where is the cow to get one ounce of ergotized grass seed or any other diseased seed?

There may be, however, other cryptogamic causes which we are not as yet acquainted with, and if we were aware of the existence of such, we are still ignorant of their action, if any, upon the uterus of the cow; so I think we may as well dismiss this as being utterly untenable also. There is still, however, one other cause to be considered before we close the subject, and that is, a cow having once aborted is ever after liable to do so again, and at about the same period of the previous abortion. The causes of this are local and confined to the womb itself, such as distention, dropsy, physometra, tubercle, fibrous tumor, polypi and hypertrophy of the womb; one or other of those diseases singly, or combined, are often seen in the womb of cows subject to periodical abortion.

Prevention of Epizootic Abortion.—When one or more cows have slunk their calves, the other cows without a day's delay should have the following powder mixed in their feed night and morning for a week, and commence again and give every alternate week for a month or so. Powdered sulphate of iron, two drachms; powdered gentian root, half an ounce; mix and make one dose, to be given as above directed. This will be a powerful tonic, adding richness to the blood, strengthening the mucuous surfaces, and imparting health and strength to the whole system, thereby enabling the animal to carry her young to its full time. Good and generous feeding is also a preventive by itself, but better in conjunction with the above powder. Cows having aborted from weakness and general debility, can be prevented from aborting again by maintaining a high standard of general good health.

☞T. C. Peters, of Maryland, says that the average yield of wool, from an ordinary flock of sheep, will be about 1 lb. to 20 lbs. of carcass, live weight, and that if more is obtained, it must be paid for in better care and keeping.

Winter Management of Stock.

Prerequisites for properly wintering stock are, 1st, good stock; 2d, proper kinds and quantity of fodder; 3d, convenient, comfortable buildings. To enter into all these prerequisites would extend this article beyond the limits of a single paper, and exhaust the patience of the general reader. I shall, therefore, confine myself to the general management of farm stock. The health and comfort of all stock is of the first importance in good management; to secure this, sufficient room and good ventilation are indispensable. A certain degree of warmth is also desirable; to insure this, tight floors and buildings are necessary. Ventilators should be supplied, so as to carry off all the foul air without contaminating the fodder; and to give the stock pure, fresh air, without subjecting them to a draft of air. The wintering of cattle and stock embraces their treatment, from the time they are brought from the pasture in the fall, till turned away again in the spring. Milch cows and cattle, intended for fattening, will need to be brought up and fed earlier than other stock, although they may be allowed the run of the pasture during the day. When the fall frosts affect the feed, or when it becomes short, a little hay and grain should be fed night and morning till it is time to shut them up; and here many are apt to err in letting the cattle run too long before bringing them in. Often the feed that they get does little if any good, merely stuffing them without increasing flesh, which is very essential for their well-doing in cold weather. It is often practiced to give out the poorest feed first, and then gradually keep improving. This feeding dry straw only, when first from grass, is a sort of torture that should be abandoned. Some succulent food should be given to keep the animals improving, and gradually accustoming them to the change, thus keeping them improving, instead of checking their thriftiness. Regularity in feeding is of the first importance in keeping stock improving; a much less quantity of feed is required to keep cattle thriving than when fed irregularly. When fed at irregular intervals or periods they are often hungry, and on the look-out for a supply, causing uneasiness. This is not the case when fed at regular intervals; they then eat their feed with a relish, ruminate and rest contented till the time for the next feeding comes around. All stock should be fed three times a day what they will eat up clean, and at a regular hour; be watered three times, morning, noon and night, with good fresh water at the yard, not driven to the pond, or stream, to push each other, and perhaps get lamed, by slipping upon ice, etc. Rock salt should be kept where they can have daily access to it; they will take no more than they need, and it will tend to keep the blood cool and the system healthy. A variety of food is as well relished, and is as desirable for dumb animals as for their masters. An occasional change from cornstalks to hay, and *vice versa*, will tend to keep up their appetite, or a change of kinds of hay; an occasional feed of roots is also desirable, tending to keep the system healthy, as well as giving a relish. For milch cows, carrots, parsnips and beets are preferable to turnips, as these roots do not affect the flavor of the milk unfavorably.

All animals should be kept cleanly, as cleanliness is essential to health. The skin performs some of the most important functions of the body; keep it clean, and in good order, by carding at least once a day. I once knew a man who fatted some of the best stock sent to market in those days, who made a practice of taking a card in his hand, and using it every time he went into the yard or stable; the result was, as might be expected, his cattle were always clean, quiet, healthy, improving and gentle, expressing the greatest satisfaction on his appearance. A good bed of straw will aid in keeping animals warm as well as clean. A few hours spent in the yard daily in pleasant weather, will greatly promote comfort, and whatever promotes comfort, tends to keep animals thriving. The different kinds of stock should be kept separate, not allowed to occupy the same yard at the same time.—STOCK BREEDER.—*Rural American.*

Mashes for Horses.

The following receipe was given me by a celebrated steeple-chaser—I never knew any horse refuse it: Take a feed of oats, a double handful of lindseed for each horse, and boil for three hours; then turn into a large tub or earthenware pan, and add as much bran, with just enough warm water to moisten the whole through; put a cloth over it, and let it stand an hour; then mix it well, and feed as soon as it is cool enough. This mash is very useful when horses in hard condition "dry up" and grow thin, in spite of continual feeds of corn. I give it once a week all the year round, but oftener if required by any particular horse. A few beans may be boiled with the corn if the horse is in a very low condition.—*London Field.*

HOG CHOLERA.—*Mr. Miner:* I send you a safe and sure cure for the hog cholera. When a hog has the disease, throw it and give two large tablespoonfuls of the common pine tar, and it will cure it if not dying.—S. REYNOLDS, *Brooklyn, Ind.—Rural American.*

The Fast Nags.

The fastest time "on record," at all distances, is as follows:

1 mile, pacing, Pohahontas	2.17¼
1 mile, trotting, Dexter	2.18¾
2 miles, trotting, Flora Temple	4 50¾
3 miles, trotting, Dutchman	7.31¼
16 miles, trotting, Prince	50.00¾
20 miles, trotting, Trustee	59.35½
100 miles, trotting, Conqueror	855.62
100 miles, double, Master Burke and Robin	1017.22
1 mile, running, Henry Perrist	1.42¼
4 miles, running, Lexington	7.19¾

WARTS ON HORSES.—H. H. Howe, of Nebraska, informs the Rural New Yorker how to cure warts on horses: "Mix equal quantities of spirits of turpentine and sulphuric acid, stirring slowly in a tumbler and afterwards bottle the mixture. Rub grease around the base of the wart and then apply the medicine to the wart with a feather once or twice a day; it will gradually eat them off. I have thus taken them off a horse's neck when as large as a turkey's egg."

Dr. H. Hinkley.

We regret extremely to hear of the death of this gentleman, so well known to the agricultural press of the country. He died in Green county, Alabama, about the 20th November, before the following letter, the last, perhaps, he ever wrote for the press, was published.

Dr. H. was a most enthusiastic agriculturist, and lover of improvement, and while busily occupied with a large cotton plantation, found time to communicate his intelligent views of matters of interest to the agricultural community, through all the leading journals. For very many years he has been a correspondent of *The Farmer*, and was one of the first to greet its reappearance. He was a native of Baltimore, and in his last letter to us expressed his earnest desire to get back to his old home in Maryland, and spend here the evening of his life. He has been cut off in the mid-day of his career, being but forty-five years of age.

Cotton Culture—Costs and Risks.

BY H. HINKLEY, M. D., EUTAW, GREENE COUNTY, ALABAMA.

"Timothy Bunker, Esq.," (page 316, Sept.,) has gone into big figures in his estimate for a cotton place, and his figures may be considerably reduced. His estimate of yield takes for granted a crop is certain. But cotton is one of the most precarious crops grown, and has numerous enemies. A man in Sumter, ten miles from here, who planted 600 acres of cotton, will make one bale to 50 acres; cause of failure, rust and worms. His loss will be over $20,000. This is but one case in many this year. I planted 300 acres, expecting to make 100 bales cotton. Rain, rust, boll worm, and caterpillar will cut the yield off so I shall be glad to get 20 bales. Others are better or worse, as the case may be. Tim Bunker puts down 60 hands for a 500 acre place. Forty hands are plenty, and 30 is all I want. I cultivate this year 300 acres corn, and 300 cotton, with 18 hands; will make 6 or 8,000 bushels corn, and had it not been for causes above mentioned, would have made 100 bales cotton. I have 16 mules, run eight double plows part time, and part time six. I worked corn and cotton with Sulkey cultivators. Wages $10 per month, and doctor's bills. Rations 3½ lbs. bacon and one peck meal per week. Three thousand bushels of corn do the plantation one year. Mr. Bunker only enumerates wages for 10 months; it takes the whole 12 on a cotton place, and sometimes 13 could be used up. There is no rest or intermission in work for cotton.

Land is scarce that yields one bale to the acre; the majority of cotton lands yields only half a bale—much land one bale to three acres; a bale is 500 lbs. Land can be rented at less than $10 per acre—for all except the very best. Five hundred acres land worked in cotton, could be stocked and worked for $15,000 per annum for first year, by any white man with brains, very easily, after first year; cost of stock and implements to be deducted, and seed also.

Half a bale to the acre would yield 250 bales of 500 lbs., at 30 cts. per lb. worth	$37,500 00
Deduct $30 per bale for rope, bagging, hauling, wharfage, insurance, tax, commission, etc.	7,500 00
Leaves	$30,000 00
Less expenses of plantation	15,000 00

Leaving a profit of $15,000 for first year, provided nothing happened to injure the crop, etc. White men who improve their own land, work improved machinery, and work better than negroes, may do better even.

There is no need of rushing at the thing so largely. Why not be satisfied with one or two hundred acres? The cotton fever is likely to kill some, some never recover, and some are not injured by it. This year it will kill a good many. A New York General has thrown up a large plantation in disgust, and gone back to New York; others are weathering the storm.

☞ During six months there were exported from Canada 15,000 horses, 103,810 cattle and 158,000 sheep.

Plank Drains—Suggestions about Draining.

I notice a correspondent, p. 336, wants more information, &c. A neighbor of mine had quite a quantity of draining done, some six or eight years since, thus:

The ditch was dug about two-and-a-half feet deep and fourteen inches wide at the bottom. Then a V shaped channel was cut in the centre of the bottom about five inches wide and the same in depth, leaving about four-and-a-half inches flat surface on each side of the channel. Hemlock slabs were then laid over the channel, and a little waste straw or leaves were then put over the joints where two slabs meet to keep the dirt from falling through the loose joints, and then the ditch is filled up.

The drains have been in constant and very useful operation since, without any repairing.

I have just had thirty-five rods of draining made in the same way, except that I sawed the slabs into pieces fourteen inches long, and laid them across the channel, after having the sharp edges hewed off and straightened.

I am inclined to think that where the bottom of the ditch is "hard-pan," and the descent not very rapid, so as not to *wash* or *gulley* out, this is a cheap way of draining that will pay; and in such a case as mine it will pay every three years—though I hope it will last twenty-five years. The descent is only one inch to the rod, but water runs freely, and there was a perceptible alteration in the surface soil within forty-eight hours.

I think there is much discretion needed in *laying out drains*, so as to accomplish the best effects with the least amount of draining. Very many, if not most of the wet lands, are made wet by the springs which ooze out near the foot of the hills which lie about them; consequently, if this water is conducted off before it disperses itself through the porous soil of the flat, that soil will not be affected by it. In order to do this, the ground must be examined at different seasons of the year, springy places noted, then drains must be laid out, just *below* them, as near *parallel* with the hill as will afford sufficient descent, somewhat as eave-troughs are arranged to carry the water off from our houses, so that the door-yards will not be all wet.

It would be very easy to show by diagram and mathematically, or rather philosophically, that as water observes the laws of gravitation, the above is a correct *theory* of *laying out drains*; and practically there is *any amount* of *proof* of it.

Of course, where there is a large spring, so large as to keep for itself an open channel, the most *direct* route to the river is the best; but in all other cases, one drain, properly located, nearly parallel with the hill, will affect more than several located vertically, or in the direction of the apex of the elevation, which answers to the *ridge* of a house roof. No one would think of adjusting troughs every two or three feet, running from the eaves in the same direction of the rafters, for saving the water or preventing the door yard from being overflowed.—RUSTICUS.—*Country Gentleman.*

The Fishes of the Valley of the Amazon.

BY PROFESSOR AGASSIZ.

The following extract from a brief report of lectures of Prof. Agassiz, will be read with interest, as indicating the extraordinary wealth of the waters, as well as the lands, of the regions of the Amazon. The Professor reports 1800 varieties of fish in the waters of the valley, against 100 in the Mississippi, while the rivers of the old world, have, with few exceptions, little more than 60, 70, or 80 varieties. The curious will be amused to learn that some of these varieties, sit on, and hatch their eggs, like hens; taking to the land, and even climbing trees. We are indebted for this report to the *Boston Cultivator*.—ED. AM. FAR.:

Professor Agassiz then proceeded with an account of the most common varieties of fishes, illustrating his descriptions of their peculiar formations and characteristics by means of drawings. He began first with the families of the Mississippi river, saying that, with the exception of two families, none of them had representatives in Southern waters. One of these families was the *Siluridæ*, known as the catfish, bull heads, and pouts. These were also found in the rivers, on the Atlantic coast, and sometimes in the Arctic regions, but not in Europe, excepting in the Danube river. The characteristics of the family were delineated briefly, and a description of the sturgeons given, and compared with the catfish—the points of difference being explained by means of drawing. The family of *Goniodontes*, which was found in the Mississippi, was not represented in South America. The most numerous family in the Mississippi river was that commonly known as suckers—*Cyprinidæ*. These differed from the *Siluridæ* in the absence of teeth in the mouth, and having them at the entrance to the stomach. The largest were found in the Missouri river, where they grow to a weight of sixty pounds. Not one of them could be found in South American waters, while there were as many in Europe as in America, and they were also found in the islands in the Indian and

Pacific oceans. There was another kind of fish somewhat similar in form to the *Cyprinidæ*, but with teeth in their mouths, and having their heads flattened. They were called *Cyprinidontes*, and the common minnows were of this kind. The next family was the perch, which had representatives among us. They differed from the others in the formation and position of their fins, and were found in Europe and Northern Asia, but not in South America. Another family with us was the pickerel, the chief characteristic of which was the position of the dorsal fin. Of this family we found nothing in South America, but they were yielded in Europe and Northern Asia. The trout was next taken up. The family was distinguished by a very small fin on the under part of the body near the tail, and was common in northern countries. The white fish and lake herring were of this species. They were never seen in warm latitudes. There was a species called *Characines*, which frequented waters nearer the temperate zones, while the fish in the more northern waters were called *Salmonidæ*. Herring were considered as not being properly a fresh water fish, and only in the Amazon were they permanent inhabitants of fresh water. Eels and cod were also briefly mentioned.

The lecturer then stated that every river system had its own kinds of fish, and that the fishes of the southern waters were not the same kind as those in northern rivers. The fish which gave character to the North differed in kind from those of the South. In Europe there were three great river systems—the Rhine, the Rhone, and the Danube—all rising in Switzerland, and flowing in opposite directions. At their sources these three rivers yielded the same species of fish, but in their lower courses these head-water fishes disappeared, and the varieties were different in the rivers. In Europe the perch, pickerel, trout, and eel differ from those of America. They were corresponding, but not identical, and the same was true of all fish in every locality—with the exception of the salmon, which was a sea more than a fresh water fish.

The *Goniodontes* were peculiar to South America, and not to Asia, Africa, or Australasia. In the Amazon they teemed in many species, combining the characteristics of the pout and sturgeon. The kinds varied in the different places in the valley, no two localities yielding the same kind. They were also found in other rivers in Brazil, and even north of that country in South America. They were to be found in the mud, and in hollow trees in the water. One of the species took care of its young as no other fish did, being provided with apron like appendages on their jaws which extended along half the length of the abdomen. On this they deposit their eggs, and carry them about until the young are hatched. Another kind bored holes in the river bank three or four feet in depth, and deposited their eggs therein in round bunches.

In the tenth lecture of Professor Agassiz's course on Brazil, the lecturer began by saying that in his public lectures he had usually aimed at giving general results, rather than showing how those results are obtained. But the growing interest in natural history warranted him in giving the *modus operandi* of naturalists at work. Supposing they had fishes to examine, they first determined if they really were fishes, or whether they were aquatic reptiles, such as star and craw fishes, which, though usually designated as fishes, really belong to a different branch of the animal kingdom. Naturalists now designate as fishes those marine animals which agree with the mammalia in general structure. They go a step farther, and divide these into orders, as, for instance, the *Goniodontes*, whose peculiarity is an imperfect mouth; and other orders with other characteristics marking them. Next to the orders are groups called families, not having a genealogical relation, but related by form. Slight differences in detail characterize still another division called genera. The lecturer gave illustrations on the blackboard, of these differences, marking the genera, mainly in the forms of the fins, tail, head, and scales, not changing the general outline giving the family character.

The Professor then described several families of the *Goniodontes* found in the waters of Brazil, remarking that he gave these details to satisfy his hearers that the animals of Brazil are entirely different from ours, and as having an important bearing on the question whence they come, and how animals are distributed on the globe. One was the family of *Callicthists*, characterized by two rows of scales upon their sides, with a depression between them. These fish have the peculiar habit of leaving the water at times; and the Professor said he had frequently found them on dry land three miles from the water. They deposit their eggs in a cavity, after the manner of the stickle-back, and hatch them by sitting, as it were, upon them. They ascend trees, and the same shot of the sportsman which brought down a parrot has been known to dislodge one of these fishes.

The next family mentioned were the *Dorades*, mainly distinguished by a single row of scales on each side, though some of the genera have two and three rows. Another family, the *Aspherides*, lay their eggs and then pass over them,

the eggs becoming agglutinated to the under sides of their bodies, and remaining held there by a filament until hatched. Still another family possesses a peculiar property which is used by the Indians to embellish their pet parrots, the fish being given as food to the birds, whose green plumage is thereby tinged with yellow spots. Some of the parrots seen in our cabinets, the Professor remarked, which were considered to be distinct species, were really specimens of the bird thus variegated in color by the Indian method of feeding.

The lecturer described several other families of this order, with their peculiarieties of form, color, and habits, remarking that several of these families have hitherto been unknown to the naturalists. He then passed to another order, the *Characines*, representing in the tropic waters our salmon. The peculiar construction of the mouth marks the different families of this order, some of them being entirely toothless, others having teeth only in the upper jaw, and others having both jaws armed with teeth. These families also differ so much in color that the combination of lines seems almost endless, though there is a general plan in the colors as much as in the form. One of these families is a most formidable fish, having a wide mouth, armed on both sides with pointed, serrated teeth. A horse or cow falling into the river would be devoured in one hour by these greedy fish. A man would fare no better.

The Professor briefly and rapidly sketched other families of this order, one of which he said comprised forty genera, only three of which were before known. One of these three was the electrical eel, so highly charged with electricity as to be able to give several shocks in quick succession, without sensibly diminishing its power. These eels are caught, as related by Humboldt, by driving mules into the water, to receive the shocks until the eel becomes perfectly harmless.

☞ Achievement, the two year old prodigy of the English turf, continues to meet with success in her career. She won the Champagne stakes at Doncaster, thus making her total winnings, this far for the year $41,885. She has been worth more than a gold mine to her fortunate owner, Col. Pearson, and if the promise of her present age is transmitted to and preserved in her three year old form, her name wil descend to posterity linked with the undying honors of the English turf. Achievement is a sister to Lord Lyon, the winner of the St. Leger, and the hero of the grand triple event. Her engagements for 1867, are: The One Thousand Guineas Stakes, of 100 sovs. each; the Oakes Stakes, of 50 sovs. each, and the Great Surrey Foal Stakes, of 10 sovs. each, 100 added; Epsom, Summer; the Prince of Wales' Stakes, of 60 sovs. each, 1000 added, and the Cornation Stakes, 100 sovs. each; Ascot, Summer; the Great Yorkshire Stakes, of 10 sovs. each, with 100 added, at York, and St. Leger, of 25 sovs. each, at Doncaster.—*Mass. Ploughman.*

Facts in Farming.

There are some things in farming that are established, namely:

That manure must be applied, not only to get up land, but to keep it up. That wet soil must be drained, either by ditching or otherwise. That sub-soiling is good. That grain should be sown earlier than it generally is; that it should be harvested earlier than it is done; that grass should be cut when in blossom; and never when ripe, unless for seed. That our soil is not sufficiently worked, especially in hoed crops; that stirring the soil and keeping it well pulverized, is a partial guard against drouth. That the most advantageous grain for horses is the oat; that it improves fodder to cook or steam it. That warm shelter in winter saves fodder, and benefits stock. That the best blood is the most profitable. That there is much advantage in selecting the best seed, the earliest matured and the plumpest. That in-and-in breeding is not good in close and consecutive relationship, but must be carried on by foreign infusion of the same blood. That warm quarters and good treatment are necessary in winter to produce eggs from most hens. That top-dressing grass lands should be done with fine, well-rotted manure, applied close to the ground. That it is, in general, best to sell produce as soon as ready for market. That blackberries require rich soil; strawberries and raspberries vegetable mould—such as rotten leaves, chip manure, &c. That more lime should be used. That salt, in some cases, is good for land—also plaster, the phosphates, guano, &c. That fall ploughing is the best for clay lands; that land should not be ploughed wet. That young orchards should be cultivated. That compost heaps are a good institution. That clay and lime, rather than animal manure, be employed in raising fruit. That manure should be rotted before it is used. That agricultural papers are an advantage to the farmer. That a cultivated mind is requisite to high farming, and that a good reputation exerts a good influence on the farming community.—*Rural World.*

Poultry Yard.

HATCHING CHICKENS.

To such an extent is the system of poultry raising carried on in France, that in some parts of that country the *hatching* forms a special trade or business carried on by a class of persons known as *Coupeurs* or Hatchers. These people hatch for farmers at all times of the year at so much per egg, or purchase the eggs in the market, and sell the chickens, as soon as hatched, at from six cents to twelve cents each, according to the season of the year. The hatching-room is kept dark, and at an even temperature in summer and winter. In this room a number of boxes, two feet long, one foot wide, and one foot six inches deep, are arranged along the walls.—These boxes are covered in with lattice or wire work, and serve for turkeys to hatch any kind of eggs. Similar boxes, but of smaller dimensions, are provided for breeding fowls. The bed of the boxes is formed of heather, straw, hay, or cocoa fibre; and the number of eggs for a turkey to hatch is two dozen, and one dozen for hens.

At any time of the year, turkeys, whether broody or not, are taught to sit and hatch in the following manner: Some addled eggs are emptied, filled with plaster of Paris, and placed in a nest, after which a turkey is fetched from the yard, and placed on the eggs, and covered over with the lattice; for the first forty-eight hours she will endeavor to get out of her confinement, but soon becomes reconciled to it, when fresh eggs are substituted for the plaster of Paris ones. They will continue to hatch, without intermission, for three to six months, and even longer; the chickens being withdrawn as soon as hatched, and fresh eggs substituted. After the third day the eggs are examined, and the clear eggs withdrawn, which are then sold in the market as new laid; but as they may be soiled or discolored from having been sat upon, they clean them with water and silver sand to restore their original whiteness. The turkeys are taken off the nest once a day, to feed and to remove the excrements from the nest; but after awhile they cease self-feeding, when it is necessary to cram them, and give them some water once a day. "At one place we observed," says Geyelin, in his account of a visit made but a few weeks ago, which we alluded in the last number of the *Ploughman*, "sixty turkeys hatching at the same time; and we were informed that during winter and early spring, M. Auche had sometimes upwards of one hundred hatching at the same time, and that each turkey continued hatching or setting, as we term it, for at least three months."

"At a farm near Lizieux," says he, "I saw a turkey that was then sitting, and had been so upwards of six months; and, as I considered it rather cruel, the hatcher, to prove the contrary, took her off the nest and put her in a meadow, and also removed the eggs; the turkey, however, to my surprise, returned immediately to her nest, and called in a most plaintive voice for her eggs; then some eggs were placed in a corner of the box, which she instantly drew under her with her beak, and seemed quite delighted. Moreover I was informed that it was of great economical advantage to employ turkeys to hatch, as they eat very little, and get fat in their state of confinement, and therefore fit for the market any day."

The extraordinary advantages of this singular system appear in its cheapness—the sitting bird covering nearly double the number of eggs that we commonly put under a hen, and at the same time getting fat for market instead of famishing in the process; in the uninterrupted succession of chickens—the hatching being completely independent of a broody condition in hens, which is often delayed or interfered with by wintry weather; in the wide margin for hatching, and the certainty of none but large broods coming off at every three weeks; and in the power to get chickens from the "live hatching machines," at any season, and thus time them as adults for the high prices of spring and early summer, without any troublesome and expensive provision of relays of pullets of different breeds and ages, which must otherwise be kept for the purpose.

We think this method well worth a careful trial with us. We shall describe the mode of raising the chickens hatched in this way in our next number.—*Massachusetts Ploughman.*

PROFITS OF POULTRY.—*Messrs. Editors:* In 1866 I kept fifteen hens—three of which were eight years—five were three years—seven were one year old—began laying March 9th—laid till September 30th—stopped laying on account of moulting. We used for cooking for a family of three, which I did not keep account of. We packed seventy-two for winter use, raised forty-five chickens, and sold seven hundred and thirty-two eggs.

Average price per dozen, twenty-one cents	$12 81
Sold thirty-three chickens—weight eighty-three pounds, at thirteen cents per pound	10 79
Total	$23 60
It cost me for keeping fifteen hens and one cock	10 39
For care and profits	$13 21

This is an exact account. The hens were not

fed during the summer—they ran around the barns and picked up their own living.—A FARMER BOY, *Lewis Co., N. Y.*

We give the above as an example to farmer's boys in account keeping. Who of them that reads the *American Farmer* will take account of the cost of keeping, and the product of their hens for a year?—ED. AM. FAR.

CHARCOAL FOR FATTENING TURKEYS.—"Having made an experiment in feeding charcoal to fattening turkeys, the result surprised me," says a writer. "Four turkeys were confined in a pen and fed on meal, boiled potatoes and oats. Four others of the same brood also, at the same time, confined in another pen and fed on the same articles, but with one pint of very finely pulverized charcoal mixed with their feed—mixed meal and boiled potatoes. They had also a plentiful supply of broken charcoal in their pen. The eight were killed on the same day, and there was a difference of 1½ lb. each in favor of the fowls which had been supplied with the charcoal, they being much the fatter, and the flesh greatly superior in tenderness and flavor."

[Did the use of coal tend to promote digestion. and, therefore, thus to increase the nutritive extract from the feed? What say poultry-feeders? —*Mass. Ploughman.*]

The Mineral and Agricultural Wealth of Southwestern Virginia.

There is, perhaps, no portion of our State which contains within itself more of wealth than the section known as "Little Tennessee." The fertility of the soil, the salubrity of the climate, and the varied mineral deposits with which the earth is liberally filled, combine to render it one of the most interesting and attractive regions of the State. With the exception of a few miles immediately contiguous to the line of the Virginia and Tennessee railroad, the great area of this beautiful country is litterally a *terra incognita* to enterprise and capital. The distance from market and the absence of many facilities for developing the agricultural resources of the country, combined with the natural adaptation of the soil to the production of grasses, have conspired to make the inhabitants of this section of Virginia rather a pastoral than agricultural people. Lying in the great limestone region, which stretches from the St. Lawrence to the Gulf, it partakes in a high degree of all the characteristics of this favored formation. Consisting of valleys, and groups of valleys, alternating with mountains rich in mineral and clothed with verdure this region throughout its whole extent presents remarkable uniformity in its geological conditions. Throughout its extent we have the same productive soils, everywhere bounded by the same great geological formations.

Through New York and Pennsylvania the whole of this beautiful region is crowded with a dense and prosperous population, with cities and towns springing up like magic; with furnaces, and mills, and factories in full blast, teeming with wealth, and glorious in its beauty.

But in Virginia and Tennessee and Georgia, it is comparatively a wilderness. Three-fourths of the country remains in original forest, and in many sections the solitudes are as deep and unbroken as if the foot of man had never intruded upon them. Why should not this section of Virginia rival the prosperity and wealth of corresponding portions of Pennsylvania? She is blessed with a more delightful climate, equally fertile soil, and mineral deposits not inferior in richness and variety to those which have secured to the latter State such a degree of prosperity.

The great need is capital and enterprise. With these, properly applied, Southwestern Virginia would, in a few brief years, rival the most favored regions of the Keystone State. We must therefore invite this capital to investments here. We can and must so present the advantages and capacities of our State as to command the attention of capitalists, and court the fullest and most searching investigations into the resources of the country.—*Lynchburg News.*

Coal Ashes.

Coal ashes in England have been found to be excellent top-dressing for clover and grass lands, especially on dry, sandy soils. The quantity used is from fifty to sixty bushels per acre, spread either immediately after harvest, or during the winter or early spring. The qualities of coal ashes are said to be improved by covering up in every cart load of ashes one bushel of lime in its hottest state, for about ten or twelve hours, when the lime will be entirely fallen. The whole is then mixed together, and turned over three times, when the cinders or half-burned pieces of coal, which would otherwise be of no use, will be found reduced to as fine a powder as the lime itself. The coal ashes should be kept perfectly dry, and when thus prepared with lime and applied to swampy soils, is said to improve them very materially. Dry coal ashes, applied to night soil, from time to time, frees it from unpleasant odor, and forms a highly concentrated manure, which is in proper condition to be carted away.

Much of the coal used for fuel in England is the soft coal, but we have no doubt good results would follow from the use of ashes of American coals. Indeed, in proof that they have considerable manurial value, we have often seen squashes and other vegetables growing in great luxuriance upon a heap of coal ashes which had been thrown out from the grates, and entirely free from a mixture of earth or manures. The consumption of coal in the inland cities and villages is becoming every day more extensive, and the ashes for the most part are thrown away as useless material.

To those living within the reach of cities and villages, it would be well worth while to collect this waste rubbish and experiment with it upon grass lands, with a view of determining its real value. It is a mine which may be well worth working, and one which the practical farmer should not overlook.—*Utica Herald.*

A Great Invention in Bee-Culture—How to Empty Combs.

The Bee papers of Europe and this country are filled with accounts of the discovery of a German Apiarian, of a method of emptying combs of honey without injurying them. The process is exceedingly simple, and consists only in slicing off the caps of the cells, and then causing the combs to revolve on the periphery of a wheel or cylinder, which empties one side of honey; then the other side is turned and emptied. Liquids, upon bodies which are whirled or revolved, tend to fly off by what is called centrifugal force. In this case the revolution is so graduated that only the honey flies off, and dead bees, bee-bread, &c., remain behind, so that not only is the comb saved, but the honey is purer and better than that strained. The temperature requisite to success, is about 80° Fahrenheit, which is gained in a warm room, or on a summer day.

The value of this invention may be the better appreciated when it is known that it requires the consumption by the bees, of 15 to 20 pounds of honey, (estimates vary,) to make 1 pound of wax, consequently, that the comb requires for its construction the use of just about as much honey as it will contain when filled. It may be found that in the economy of bee life, it is essential for the bees to make or excrete a certain amount of wax in order to remain in good health; but this is hardly probable, for it has long been the practice of bee-keepers to save empty or partly filled combs with scruplous care, and give them to the bees. And no bad results have ever been noticed.—*American Agriculturist.*

Manurial Values.

Fertilizers purchased for agricultural purposes have been a fruitful subject of discussion, arising from the discrepancies that often exist between their value *in the market*, owing either to cost of production or to a demand for other uses—and their value *on the farm*—what they will actually bring out of the ground in increase of production. Prof. Anderson writes a letter to the Scottish Farmer, in which he refers to saltpetre, as an example of the kind—an article which, commercially speaking, is of so much greater value than it is in a manurial point of view, that no farmer can afford to purchase it; because, although to a certain extent it is a valuable fertilizer, yet the results produced by it would be too dearly purchased at the price which it is worth in the market. After mentioning this, the Farmer adds:

On the other hand, the commercial value of a fertilizer may be considerably increased, simply because its manurial value is such that the farmer can afford to give more for it, and the demand which arises for it from this cause will, as a matter of course, increase its commercial value, which may be still further heightened if the supply at any time falls short of the demand. In the latter case the commercial value might become too great to allow it to be used profitably as a fertilizer. Again, there may be a difference even in the manurial value of a fertilizer, as an article may be more advantageously used as such on certain soils, and under certain conditions than in other cases, and thus the manurial value will be greater to some farmers than to others.

From all of which we may safely conclude, that when the chemist, after completing an analysis of any fertilizer, goes on to give an estimate of its *money value*, he ventures on what must, of necessity, be subject to constant fluctuations, and if correct for the time and place for which it is calculated, may be quite erroneous—when quoted at a different date, or in another country.—*Country Gentleman.*

Signs of a Severe Winter.—Says the *Lynchburg News:* The phenomena which usually presage, according to the notions of the very observant in such matters, the approach of a hard winter, are becoming very marked as the season progresses. Hives are overflowing with honey, the husk of corn are declared to be of extra thickness, and the furs of animals are pronounced exceedingly rich and heavy. It is observed, too, that the squirrels are making arrangements on an increased scale for storage of nuts.

The American Farmer.

Baltimore, January 1, 1867.

TERMS OF THE AMERICAN FARMER.

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BALTIMORE.

Christmas and New Year.

We greet our readers everywhere, with the joyful Christmas Proclamation, "*Peace* and *Good-Will*." Let the New Year take up the words of love, and carry them outside of the churches, and into the fields, where the Angels first uttered them. Let them go forth with men into all their callings, and all their daily life, not as words merely, but as powers, to do the works of peace. It is the noble privilege of man, to speak the words, and do the works, of the Ministering Spirits of God.

NO POLITICS.—A Philadelphia friend says he is glad to see *The Farmer*, but would like him better if he would drop all politics. *The Farmer* takes his kindly suggestion in the spirit by which it was prompted. A too keen remembrance of the sad past, or a "rash humour," it may be, not yet toned down to a becoming meekness, has been exhibited occasionally in the prosecution of our proper work—instruction in agriculture. But, withal, to such as will let "by-gones be by-gones," and who feel, and mean, kindly to those with whom he had sympathized and suffered, there is no heart that goes out with less of bitterness, or more of brotherly kindness, than this old *Farmer's*. Would that he had the power to still the bitter waters of strife, and to make the people North and South feel, that, after all, they are *brothers*.

☞ We call attention to the advertisement of the Leonard Scott Publishing House.

EXECUTIVE COMMITTEE OF STATE AG. SOCIETY. The first quarterly meeting of the Executive Committee of the State Agricultural Society was held on the 4th of December, at the office of the Society, 67 West Fayette street. John Merryman, Esq., was appointed permanent President of the Committee. A communication was received from Ross Winans, Esq., declining, from personal considerations, the office of President of the Society. The committee will meet again early in January to elect a President, according to the constitution, from among the Vice-Presidents.

Sub-committees were formed to take charge of the Finances, the obtaining a charter for the Society, and the selection of a show ground.

☞ An inquirer says: "Can you tell us why it is that Peruvian guano has come to be nearly worthless? That which I have used for the last three or four years was not actually worth $20 per ton. I have bought my last bag.

"I have been using Peruvian guano for the last fifteen years, and what I state here I know to be a matter of fact. I have made inquiries of all the farmers in my section, and they are of the same opinion about guano."

Got supplies from the wrong quarter we suppose.—ED. AM. FAR.

THE LOUISVILLE JOURNAL.—The thirty-sixth anniversary of this Journal was celebrated recently by a banquet. The venerable senior editor, the renowned Prentice, presided, and "gave to the occasion the brilliancy of his wit, and the eloquence for which he is so famed."

General Rousseau sent the following toast:

"*The Louisville Journal.*"—Its leader of today is sufficient evidence that it is as vigorous and powerful as when, thirty-six years ago, it sprang into being, matured and full-armed like Minerva from the brain of Jove.

POST MASTERS.—Will Mr. John Dabney, a P. M., who wrote to us lately on business, please write again, and say in what part of Uncle Sam's dominions he has the honour of keeping a Post Office, and give us the name of his office? He does not give it inside of his letter, and it is not legible outside.

☞ The paper of Dr. Lee on "The Study of Agricultural Facts, and the value of fertilizers," will be found very interesting and instructive. We hope the doctor will favour us further on kindred topics.

The Agricultural College of Maryland.

ELECTION OF PRESIDENT AND PROFESSORS.

A meeting of the Board of Trustees of the Maryland Agricultural College was held in Baltimore on the 10th of December for the purpose of electing Professors for the reorganization of the College.

There were present: Gov. Swann, Lieut. Gov. Cox, and Rev. L. Van Bokkelen, representing the State; and Hon. James T. Earle, President of the Board, Rev. Dr. William Pinkney, Hon. Charles B. Calvert, Col. Edward Lloyd, Otho H. Williams, Esq., and Col. William H. Purnell, representing the private Stockholders. The election resulted as follows:

GEN. CUSTIS LEE, President, and Professor of Mathematics and its Applications, and Military Science.

N. B. WORTHINGTON, A. M., Professor of Moral and Mental Philosophy, and English Literature.

DR. JAS. HIGGINS, Professor of Natural Sciences and Agriculture.

BATTISTA LORINO, L. L. D., Professor of Ancient and Modern Languages.

MR. DANIEL BARKER had been previously appointed *Practical Agriculturist* and *Horticulturist*.

Other Professors and Assistants will be appointed as the exigencies of the Institution may require it. The College will be reopened on the 6th of February.

Farmers' Clubs.

We do not suppose that there is in any portion of the country, so much apathy as to agricultural interests, as here in Maryland. States devastated by the war have had great agricultural gatherings, and numerous counties in those States have had neighbourhood meetings for the discussion of their affairs, and have organized associations, and appointed stated times of meeting. In New Orleans there has been one of the most imposing gatherings, with a spirited exhibition of agricultural and mechanical productions. In Richmond, there has been a great convention of her farmers, and a discussion of many days, upon the important topics presented by the present condition of the agricultural affairs of the State. North Carolina has had her agricultural State convention for the same purpose. In these and in other States, there have been many associations formed in neighbourhoods and counties, which indicate a spirit and energy that make us very hopeful of the rapid revival of Southern agriculture.

Here, in Maryland, we have, indeed, organized a State Society. This is, at least, a good beginning. Let this first step be followed up. Let the Society be, by all means, encouraged. Let every Marylander, who calls himself a farmer, become a member, and give it his personal influence and support, and let us have a State Association of farmers that we may be proud of. But what we would call attention to, especially, in these lines, is the lack of neighbourhood association—farmers' clubs. Where is there now one in the State, but the time-honored association of Talbot county, the club that for so many years has held its monthly meetings, going from farm to farm, and eschewing all topics of conversation and discussion, but those especially pertaining to the order of the day—a good dinner, indeed, being always discussed as not out of order. Why should there not be in every county of the State a half dozen such clubs? These should then unite in a county association, and the county associations should be the earnest, active, allies of a great State Society. We earnestly commend the matter to the consideration of our friends throughout the State, and hope the leisure of the winter months will be taken advantage of to get up farmers' clubs in every neighbourhood.

Labour.

Many sermons have been written on the "dignity" of labour, and much pains has been taken to persuade young men that it is "dignified" to roll up their sleeves, and toil and sweat in the dirt. Has any one been persuaded that this is "true preaching," and, if so, has he been prompted by it to go to work? No. No man ever worked because of the dignity of labour, and the argument may as well be dropped.

Most men work from necessity, or what seems to them so, all should work because it is their *duty*. This is the word—DUTY. It is due to himself, his friends, his country, and, above all, to Him who gave the faculties and the power to work, that every young man should take hold at once of that which lies before him, and do it with his might.

We like, therefore, the preaching of Gov. Wm. Smith, of Virginia, who, in his speech at the Farmer's Convention at Richmond, is reported as follows: "When he got home after the war, he found citizens of the village standing at the corners of the streets, the young men idle—but he reminded them of their duty. He told them if they could not earn a dollar a day then they ought to take less, and they would have the consolation of knowing they had done their duty. That was the principle." This is indeed the "principle"—the very beginning of all right-

doing, that a thing be done because it ought to be done.

But, alas for our weakness! this first law of duty does not often sufficiently constrain us, and He who "knows what is in man," has hemmed us about with necessities, real or supposed, which whip us to our work. The necessity of food and raiment for ourselves, and those dependent on us, the supposed necessity of providing a home of our own, of keeping our position in society, of making a good show before the world, of laying up some fund for a future day, of supplying the thousand wants, many of them imaginary, which press upon us day by day; our pride, our vanity, our ambition, our avarice, our love, our honour, all supply us with motive power to do what we often persuade ourselves is done from a sense of duty. Labour in the callings of life is right and good in itself, without reference to the imperfect, or even vicious, motives which prompt it. God's work in the world is often done by evil agents, and through vicious promptings. There are motives, too, other than duty, that are amiable, and lovely, and of good report. But the "principle" of duty, to begin, or be moved to, a work because it is good, because it is right, because it is the very work which has been set us to do, while it does not change the character of the action makes the doer God-like. Let us tell our young men, then, not that labour is "dignified," but that it is *right*—that it is their "duty."

President of the State Agricultural Society.

At a meeting of the Executive Committee of State Agricultural Society, held on the 4th of December, a communication was read from Ross Winans, Esq., declining the appointment of President of the Society. This was matter of great regret to the committee, as it will be to the community, for no man in the State could more worthily and efficiently fill the position. It devolves now on the Executive Committee to fill the office from among the Vice Presidents, and a suitable selection will, no doubt, be made from so respectable a list of Maryland gentlemen.

ORCHARD AND HERD'S GRASS.—A correspondent in Augusta county, Va., inquires: "How much seed to the acre of these grasses?" Orchard grass is very light and chaffy, and when sown alone not less than two bushels is required. Of Herd's grass one bushel per acre. If mixed, halve these quantities; and so when sown with clover or timothy.

Old Virginia.

"'Twas my forefather's hand
That placed it near his cot,
There, woodman, let it stand,
Thy axe shall harm it not."

The thoughts upon the holding of our homesteads, and the value of our lands, which we have poorly, but earnestly, expressed in the *Farmer*, in months past, are nobly and powerfully uttered from the late Farmers' Convention at Richmond, by the President, Mr. Willoughby Newton, and ex-Governor Smith. To preserve the old homes and the old land-marks, that not a house be alienated nor a tree cut down, should be the prompting of every true Virginian; not from hostility or unfriendliness to any outside of the Old Commonwealth, but that the identity of her people may be preserved, and that the sons and the grandsons of her present and past generations may not fail of their inheritance in the future wealth and grandeur of the noble old State. And more, that this great future may be the work of their hands. It is a rich heritage, and a noble work. Let others come from every quarter, for there is room and verge enough, who would make new homes, and take part in the great work, and be adopted as sons, but let the Old Dominion be still the land of the old Virginians. We make the following extract from Mr. Newton's address:

"To sum up my advice in as few words as possible, I would say: Hold fast to your lands. Do not sell them under any circumstances except at a fair price. Do nothing in haste—await developments. You had as well be ruined by interest, as by the voluntary sacrifice of your property. Do not refuse to sell your *surplus land at a fair price to pay just debts;* but cling to the homestead. Whether it be the humble cottage or the stately mansion that has sheltered you and your fathers, let it continue to shelter your children and your children's children. Teach the rising generation to preserve the land-marks, to venerate the 'patrimonial oaks,' and be sure to love each shrub and tree planted by their fathers as if it were a sentient being. You will thus cherish a sentiment stronger than law, by which your homes will be preserved to your posterity.

"If your estate is large, divide it with your sons, and keep them in the State; for one of your young men of proper spirit is worth a hundred immigrants. You may retain a thousand acres of arable land, which may be cultivated under your own eye with entire convenience, with the aid of a bailiff, according to the English system of managing large farms. As an illustration, I cite the Netherby farm, in Cumberland, England,

containing 1290 acres of arable land, exclusive of parks, of the operations on which a detailed report is given in the Library of Useful Knowledge. Smaller farms of 500 acres, or less, may be cultivated with equal success, under the management of an active and intelligent proprietor, with the aid of a bailiff. To the highest degree of success, lime, grass, stock, labor-saving machinery and manures—home-made and bought—are indispensable. The truth that poor land cannot be cultivated by hired labor without loss, must never be forgotten. This makes improvement a matter of necessity, if not of choice, and may, in the end, prove ample compensation for the loss of our slaves.

"The soil of Virginia is kind, and easily cultivated; the climate genial, and the variety of her productions greater than that of any other region. In addition to all the productions of Great Britain, we have the important staples of cotton, tobacco, and Indian-corn. We have abundant water-power, boundless mineral resources, free navigation, and open markets with all the world. Why, then, should our lands, not have a high market value, and be capable of profitable cultivation by hired labor?"

Governor Smith said:

"He agreed with the President, that large farms could be managed better than small ones, if there was capital to do it. When a man had a little farm he became like one of his own cattle, for he had to work incessantly, and there was no time for the improvement of the intellectual man. He had earnestly impressed on his friends not to leave the country. Where would they go? Virginia was the place for them, after all. Let every Virginian say 'this is the spot for me; here is my ancestors' home. I will die here, and I spare no effort to restore my native State!' Where could they go? To Mexico? No. To Brazil? To the West? No. For there they would be overwhelmed by hordes of foreigners. He had travelled much of late, and took occasion to converse with the people. He came to this city, and saw palatial residences going up. And for what? To sell other people's industry in. Thousands of dollars were thus spent, when, if they had been applied to manufacturing purposes, other people would be buying from us. He had been to Danville. He saw there a water front of a mile and a half, which could be devoted to manufacturing purposes, but he found the merchants there putting up fine houses in the country, where they spent some of the time which ought to be devoted to business. He saw fine stores going up here, in which to sell shoes and hats, from New England, wine from the Rhine, and silks from France; whilst in place of them new factories should be established, in which the Confederate soldiers could get employment. He looked forward with hope, though the signs of the times were ominous. Let us look forward with hope, and let us go to work and do our duty."

Experiments on Potatoes.

The distinguished agricultural chemist, Baron Von Liebig, has published a paper containing the records of a series of experiments on the growth of potatoes, and analyses of the results, which are worthy of attention. The soil selected for the experiment was a coarsely powdered turf. One of these was left unmanured, the others were manured. One received a copious dressing of phosphate, sulphate, and carbonate of ammonia; the other was supplied abundantly with the phosphates of potash and soda, carbonate of potash and gypsum. The result of this upon the soils of the three boxes is represented in the following table, of which No. I, expresses the unmanured box; No. II, that treated by the salts of ammonia; and No. III, that supplied with the alkaline phosphates and gypsum:

	I.	II.	III.
Phosphoric acid	2.20	1.96	0.93
Potash	1.10	....	2.83
Soda	0.23	....	0.44
Lime	11.08	....	0.68
Chlorine	0.39	....	....
Silicic Acid	22.45	....	....
Sulphuric Acid	1.21	0.98	0.98
Magnesia	0.95	....	....
Sesquioxide of Iron and Alumina	26.40	....	....
Nitrogen	24.60	1.51 In addition to contents of No. I.	.... In addition to contents of No. I.

The ammonia appeared at first to retard vegetation, the shoots of the potatoes making their appearance above ground two days later in the turf which had received the ammonia than in either of the other boxes. The shoots in No. III. grew much more rapidly than in the others, but towards the close of vegetation, the shoots in No. II. were quite as luxuriant as those in No. III., though the latter had to the end a brighter colour. Flower buds made their appearance four days later in box No. III. than in box No. II. Soon after the stalks began to wither, the potatoes were dug with the following results:

	Box I. Turf alone.	Box II. With ammonia.	Box III. Without ammonia.
TUBERS.			
Grammes	2520	3062	7201
Proportion	100	121	285
Weight of tubers planted	7.6	9.7	21.7
TOPS.			
Grammes	1837	3535	2870
Proportion	100	192	156

The average yield per acre would have been

112 136 320cwt.

the best arable land producing about 180 cwts.

Calculated dry, the results vary a little, as may be seen by the following table:

	TOPS.		TUBERS.	
	Solid matter grammes.	Water grammes.	Solid matter grammes.	Water grammes.
I.	462.36	1374.64	386.72	2133.45
II.	716.22	2818.78	696.03	2365.07
III.	672.85	2197.15	1427.24	5773.76
	Per cent.	Per cent.	Per cent.	Per cent.
I.	25.17	74.83	15.34	84.66
II.	20.53	79.47	22.74	77.26
III.	23.45	76.55	19.82	80.18

As far as a single series of experiments can go, this would appear to indicate an inverse relation between the quantities of water in the tops and in the tubers, respectively; where the latter were rich in solid matter, the former being watery, and *vice versa*. It would also appear that forcing the growth of the plant diminishes the quantity of water in the tuber, and that ammoniacal manures are especially energetic in this direction.

The results are explained by Baron Liebig, as due to unequal distribution of the elements of plant-food. Thus the potash in the soil amounted to 277 grammes, of which a full potato crop could withdraw only about six grammes. The soil also contains twice as much phosphoric acid, ten times as much lime, and about as much magnesia as potash. Now potato tops are rich in lime and magnesia, and poor in potash, while tubers abound in potash, and are poor in the alkaline earths.

Now, taking the tubers as 10, the tops in box I. were 7.2, and in box II., 11, but considering the *increase*, if the increased product of tubers in box II. were rated at 10, that of tops would be 31. Therefore, the use of phosphoric acid, and salts of ammonia in manure, had brought into play, lime, magnesia, and potash, which had previously been inert, while the deficiency in potash interfered with a development of tubers corresponding to that of tops.

In box No. III, the addition of potash stimulated the growth of tubers, for, taking the tubers, as before, at 10, the relation between tubers and tops was:

	Tubers.	Tops.
On the whole produce	10	4
On the increase	10	2

Still further, of the potatoes grown in the unmanured turf, every tuber was attacked by the potato disease, whence the Baron infers that whatever promotes the natural development of the plant, wards off disease. He attributes the failure in the grape and silk crops of Italy, entirely to the exhaustion of the constituents of the soil essential to the healthy growth of the vine and of the mulberry.

Now, while these experiments are very instructive, we could have wished that they had been somewhat differently conducted. Turf, for example, is an exceptional soil, and its peculiarities militate against the experiments. How much so will be seen when we take account of the quantities of manure added to that which was already in the soil. For example, the ammonia added contained 1.5 grammes of nitrogen, which is less than 1–16th of the whole quantity originally in the soil, while the potash was more than double the amount in the unmanured turf. Such wide disproportion in the relations of the different manures to the quantities already on hand, must vitiate any reasoning upon the results. Furthermore, the organic matter in the turf was constantly supplying nitrogen, and we may rather suppose the increase of box II. to be due to the phosphoric and sulphuric acids, which effected a much greater percentage change in the soil than did the ammonia.

Again, the same weight of tubers ought to have been planted in each box. The manner in which this may have affected the yield, will be seen by a consideration of the proportionate yield as compared with the sowing. Thus, while box III. produced nearly three times as much as box I., it must be borne in mind that it was also planted with nearly three times as much seed. By calculating the actual multiplication of the crop, we get very different results from those given in the tables quoted above. Thus, rating in this way, we find that box I. produced, of tubers, 331.6 fold, the weight planted; box II., 305.5 fold; and box III., 331.9 fold.

Such irregularities as these prevent us from reasoning closely on the actual increase from each manure. The experiment seems to us valuable, chiefly in indicating the direction in which growth is promoted by the different agents employed, and in this the results appear to us important. The difference is rendered still more striking if we consider the proportion between the solid matter in the tops and tubers, respectively, in the three boxes. Taking the dry matter of the tops at 100, we have the following results:

	DRY MATTER.	
	Tops.	Tubers.
Box I.	100	83.6
Box II.	100	97.2
Box III.	100	201.6

Thus the proportion of dry matters, in tubers, to that in tops, increased in both the manured boxes, but very much more in that treated with the alkaline salts.

Book Notices.

THE SOUTHERN CULTIVATOR FOR DECEMBER, enlarged to *Forty-eight Pages*, contains the following interesting articles:—Farm Work for December; Agricultural Implements and Machinery; New Process for Dissolving Bones; Chinese Tea in North Carolina; Rice Culture; Possible Number of pounds of Cotton to the Acre; The Dawn of Day in Southern Agriculture; No Profit in Cultivating Poor Land; Guano; Pastures and Forage Crops; Manures; Economical Farming; Sea Island Cotton; Gardening vs. Farming; The Garden; Culture of Vegetables; Mexican Pea; The Flower Garden; The Orchard; How to Plant a Tree; Grapes; Brinly Plows; Guinea Fowls; Food for Chickens; Curing Meat; How to Cook and Make Sausages; The Dead Wife's Portrait, (Poetry,); Mrs. Buckster, Willie's Journey to Heaven; besides Editorials, &c., &c. The 25th volume commences January, 1867. Now is the time to subscribe. Wm. N. White, Athens, Ga. $2.00 per annum.

Publishers wishing to club with the *Southern Cultivator*, are supplied with it at $1.50 per annum.

THE SOUTHERN REVIEW.—A Quarterly to be called *The Southern Review*, will be regularly issued in Baltimore from and after January 1, 1867. The *Review* will be edited by Albert Taylor Bledsoe, L. L. D., one of the profoundest thinkers, most vigorous writers, and ablest scholars of the South. As a lawyer, a mathematician, a linguist, and a man of letters, he is surpassed by few in any country. The contributors to the *Review* are all gentlemen of high scientific and literary attainments.

A WONDERFUL MICROSCOPE.—The editor of the New York *Sunday School Advocate*—Rev. Daniel Wise, D. D.—says:

"The simplicity, cheapness and great magnifying power of the celebrated Craig Microscope struck me with surprise. Then I was examining a fly's eye by its aid, and was struck with wonder at the skill and power of the Creator which is displayed in its structure. When I saw a statement in an advertisement that this microscope magnified one hundred diameters, or ten thousand times, and could be bought for $2.50, I thought it was one of the many humbugs of the hour, for I had paid $20 for a microscope not long before. But now I find it to be a really valuable instrument which I should like to see introduced into the families of our readers in place of the manifold useless toys which please for an hour and then are destroyed. This microscope would both amuse and instruct them, and I advise every boy and girl who wishes to know the wonders which lie in little things to save his money until he has $2.75," and send it to Geo. Meade, Racine, Wisconsin, and you will promptly receive this beautiful new microscope by mail, postage paid.

POUDRETTE—HOW TO PREPARE IT.—A correspondent at Greeneboro', North Carolina, wants information on this subject. There is no book or publication that he can resort to. The practice is, mainly, to haul the raw material to some spot where it may be spread and dried in the sun, and to mix it with earth, ashes, or any refuse that will help to dry it, and make it fit to handle. It makes most valuable manure, and should never be wasted where it is possible to put it in condition for use. To make it portable, it is important to use the least quantity of drying material that will answer the purpose; but, if it is to be hauled short distances only, it is of less consequence.

☞ The experiment of sowing oats in February, made by our correspondent of Baltimore county, is a striking and useful one. It is well known that there is great advantage in the earliest possible sowing of this crop consistent with its safety, and which the preparation of the ground will allow. If further trials, on the suggestions made, shall show similar results, a great improvement may be made on our common practice. It will greatly favour too the clover seed, if it can be sown thus early on land prepared in the fall.

HOW TO SELECT FOWLS.—In view of the fact that the holiday season is at hand, when poultry is more frequently on our tables than at any other time during the year, an exchange submits the following rules for selecting good fowls: A young turkey has a smooth leg and soft bill, and if fresh the eyes will be bright and feet moist. Old turkeys have scaly, stiff feet. Young fowls have a tender skin, smooth legs, and the breast bone yields readily to the pressure of the finger. The best are those that have yellow legs. The feet and legs of the old fowl look as if they had seen hard service. Young ducks are tender under the wing, and the web of the foot is transparent. The best are thick and hard on the breast. Young geese have yellow bills, and the feet are yellow and supple; the skin may be easily broken by the head of a pin; the breast plump and the fat white. An old goose is unfit for the human stomach.—*Ex.*

For the "American Farmer."

The Study of Agricultural Facts.

BY DR. DANIEL LEE.

In the December number of the American Farmer, Peruvian guano is quoted at $95* a ton; while such appears to have been the demand for this fertilizer that the market is bare* of the article. Common cow manure, formed by the consumption of wheat straw, rye or oat straw, is not worth more than a dollar a ton for agricultural purposes. How many farmers or planters have thoroughly studied the causes of this remarkable difference in the price and value of these substances, both of which are largely used as plant food? Mr. David Dickson, of Hancock county, Georgia, made a fortune by early mastering this problem in agriculture, and largely utilizing the material facts which it discloses.

Why should the dung of sea-birds be worth from fifty to one hundred times more, pound for pound, than that of cattle? Both are animal excrements, both nourish agricultural plants. Why then is the imported manure worth so much more than the homemade? There are good reasons for this difference, and every farmer ought to understand them.

If the constituent elements of both were the same in quantity, condition, and necessity to be applied to tilled land, any essential difference in price would be absurd. On the contrary, if the cow manure is composed mainly of substances which rain water and atmospheric air can supply to growing crops, and has only a trifle of assimilable nitrogen and phosphorus, while Peruvian guano has very little of those elements which air and water furnish, but is rich in available nitrogen and phosphorus, (which are deficient in most soils,) we have only to prove the necessity of nitrogen and phosphorus to plant growth, to explain in the clearest manner why the one manure is worth so much more than the other. All reading farmers are so well satisfied as to the necessity of assimilable nitrogen and phosphorus in the healthy organization of plants and their seeds, that no space will be occupied in the Farmer in discussing that point. It is vastly more important to learn, if we can, how to concentrate homemade manure, and give to a ton of it the same agricultural power and value which exist in the best Peruvian guano. Mr. Dickson purchased annually ten thousand dollars' worth of this and other highly concentrated manures, mainly because with them twelve hundred acres of land were readily fertilized for cotton or corn before planting. To make good cowpen and stable manure enough for twelve hundred acres, and apply it before planting every year, would be a formidable, not to say, an impracticable undertaking. The latter operation he did not attempt, while the expense of annually manuring twelve hundred acres, so far as the labor of distribution was concerned, was comparatively small, and the profit large.

When a man makes four hundred pounds of clean cotton on an acre, and sells it, something less than one pound and a half of nitrogen, (which is so valuable in guano,) leaves his plantation. The bale of cotton contains also about four pounds of incombustible salts. For the sake of round numbers, call the loss in both six pounds. Let us assume that to each acre planted in cotton he applies one hundred pounds of Peruvian guano, and thirty-three and a third pounds each of potash, common salt and epsom salts, and that the surface soil gains as much by moving water bringing fertilizers into it, as it loses by washing or leaching. In this case the acre receives two hundred pounds of agriculural salts a year, and parts with six pounds, having a clear gain of one hundred and ninety-four pounds per annum. A thousand acres of Mr. Dickson's piney woods plantation, treated in this way ten years, would lose, on producing a bale to the acre, of four hundred pounds on an average, sixty thousand pounds of agricultural salts, and gain one million pounds of Peruvian guano, and the like weight of potash, common salt and epsom salts. The excess of gain over the loss would be one million nine hundred and forty thousand pounds.

With this enormous balance in favor of fertilizing atoms applied to the soil, should not Mr. Dickson's home plantation grow rich quite as fast as its owner? This plantation contained, when I saw it, some nine thousand acres; and it is pertinent to inquire whether a man, who buys ten thousand dollars' worth of highly concentrated manure a year, may not so use it as to draw fertilizing elements from what were before insoluble silicates, phosphates, sulphates and chlorides in the ground, as well as carbon, nitric acid and ammonia from the atmosphere? Is it not a part of the great and perfect economy of nature that manure, as well as the seeds of plants and all animals, shall be reproductive of more food for plants? If so, is not this reproductive function a matter of the highest importance to all tillers of the earth, who need plant food as much as bread?

A little phosphate of potash, extracted from a granite rock, by a few cells of moss growing on

*This was an oversight, and the price should have been quoted $86 per ton.

it, enables this plant to produce, for plants of a higher order, much more assimilable potash and phosphoric acid derived from this adamantine rock. Explain this phenomenon as you please, to my mind it is highly instructive. Can there be a reasonable doubt that a little manure of the right kind, often sends the needy roots of corn, and cotton, into fresh pastures beyond what they would reach without this acid?

If the countless rootlets of plants have any power at all on the earthy matters that surround them, whether chemical, vital, electric or any other, the extension and increase of these rootlets must augment their peculiar force. A fertilizer that contains no carbon often develops cotton, corn and wheat plants, that have three or four times more carbon than those growing on the same soil, but not fertilized at all. In the same way a few pounds of gypsum applied to an acre may send clover roots into fresh pasture, and thereby give to this renovating plant twice or three times more sulphur than the gypsum contained. Soluble phosphoric acid and potash have the same recuperative and reproductive power.

Viewed by the light of undeniable facts, good manure has substantially the reproductive function of good seed corn; and the painful fact should not remain hidden under a bushel that, while most farmers save their seed-corn with commendable care, they waste seed-manure as though it had no value whatever. Two hundred pounds of manure will fairly seed an acre, if it is sound, and of the right sort. It was this kind of *seed* that enabled Mr. Dickson to raise three times more cotton seed on an acre than would grow without it; and this excess of cotton-seed, used as a manure for corn and field peas, more than doubled his crops for feeding hogs and cattle. From these he produced meat to sell on a cotton plantation, and such heaps of hog manure of the richest kind, as might rejoice any owner of piney woods land. Deep plowing enabled his first seed manure, his cotton seed manure, and that from hogs, cattle and mules, to operate with double effect on both soluble and insoluble salts in the soil.

Gap Creek, Knox county, Tenn.

☞An agent is now in England purchasing brood mares and young stock for the King William Stud Company, at the Cape of Good Hope. In that extreme point of the world they are giving great attention to the breeding of horses.

☞At $150 per bale the South will realize from her cotton crop alone about $225,000,000.

For the "American Farmer."

Sowing Oats in February.

CLAIRMONT, Baltimore county, Md.

MESSRS. EDITORS: By reference to books on the subject of agriculture, and the monthlies, I have yet to learn that oats have been sown in February, neither have I heard the practice verbally suggested. Believing the object could be profitably accomplished, I prepared in the autumn of '65 a small strip of tolerably rich clay loam, having an easterly exposure, and, on the last snow in February, I sowed it down in oats, at the same time the land was top-dressed, at the rate of twenty-two horse cart loads of barn-yard compost per acre.

If there is a sufficiency of vegetable or animal matter on the land, and manure made on the farm is not sufficient for the crop, guano and other fertilizers may be resorted to, and with a saving of 100 to 200 per cent. over and above the cost of carting manure from the city.

For the process of covering the seed and manure, I relied on the honeycomb state of the land, aided by the melting snow and spring rains; as I anticipated, the seed germs started vigorously and promised success; when the plants were sufficiently grown and the land dry, I passed a common dray harrow over it, followed by the roller. I ploughed, manured, and managed three acres under similar circumstances, and sowed the oats about the tenth day of the following April. Now to the result. The oats sown in February produced a heavier crop, greater weight of grain and straw, and was ready for the scythe upwards of *two weeks earlier* than the April crop, thus affording not only an increased yield, but an opportunity of getting the crop in market early, and obtaining the highest price. Clover and other grass seeds may be sown in February, at the same time of seeding the oats. In preparing land for oats, or any other spring crop, it should be ploughed in the autumn, for reasons that every observing farmer understands. I am strongly in favor of the propriety of surface manuring; to gain the utmost by the practice, the manure should be spread after ploughing, and thoroughly incorporated by repeated cross-harrowing. With those who are opposed to the practice, and prefer to plough the manure under in the autumn, I will compromise by proposing that the land be cross-ploughed and subsoiled the following spring, after which harrow the land till it is harrowed enough, then harrow once more. The subsoil plough should be run sufficiently deep, to elevate the manure applied in the autumn. If the sub-stratum is rich, and

the upper stratum impoverished, the subsoil plough may be run as deep as possible. Again, on the contrary, if merely pulverizing the substratum is the object, it will be necessary to remove the elevating slide. By the free use of the subsoil plough and cultivator, drought (under ordinary circumstances) need not be feared.

As ground plowed in the autumn is seldom or ever harrowed, the oats may be sown without that preparation, and with fair success.

Yours, respectfully,

RIALCNIS.

Productiveness of North Carolina Lands.

DUNN'S ROCK, Transylvania co., N. C.,
December 10, 1866.

Messrs. Worthington & Lewis, Baltimore.

DEAR SIRS: You have conferred a great favor upon your friends by reminding them that the "American Farmer" not only exists, but that its constitution is in no degree impaired by the long course of alteratives we have all, *nolentes volentes*, been compelled to take.

Greenbacks are very scarce, and it is only because I confidently indulge the hope that the many practical hints given in your monthly, will do vastly more than replace the outlay, that I have brought my resolution to the sticking point, to renew my subscription to my old friend, the *Farmer*.

I observed in your November number, a long letter setting forth in glowing colors the benefits to be derived from a settlement in the pine hills of Georgia. Allow me to say a few words in behalf of that section of country in which I reside, and which is commonly known as the Valley of the French Broad.

About twelve or fifteen years ago, a friend of mine, an experienced rice planter and a thoroughly practical man, whose health had broken down from too earnest a devotion to agricultural pursuits, on the coast of South Carolina, determined, if possible, to find a home in some region where productiveness of land was not incompatible with the enjoyment of robust health. After a careful and prolonged search, the desired location was discovered in this valley, and, to prove that the decision arrived at was a wise one, I will add that the health of my friend which had suffered severely from, I think, twenty-seven attacks of low country fever, was, in three or four years, so thoroughly re-established, that no finer specimen of athletic manhood could be found anywhere. So much for climate.

The lands of this valley require no auctioneer's puff; their productiveness is simply a fact, but *because* it is so, and *because* the wretched system of renting by the year has long obtained, some of the lands thus wanting the supervision of the owner have deteriorated.

This was the case with a considerable portion of the large farm, or rather collection of small farms, purchased by the gentleman I refer to. His practical eye, however, saw no discouragement in this, and the impoverished soil soon, under his skilful management, brought forth abundantly—if a crop of corn, in some instances, averaging over seventy-five bushels to the acre, can be said to prove it.

This land was "brought up" by nothing except stable yard manure, and lime. The latter can be procured in any quantity, at about fifteen cents per bushel, delivered, and when applied upon worn-out land will ensure a return of from forty to seventy bushels per acre, thus repaying the outlay in the first year after the application of the lime. From forty to fifty bushels of lime to the acre is requisite.

On virgin land, without the addition of any fertilizer, the following fact will show what can be done: From thirty-three acres of land just reclaimed from the forest, a crop of corn, averaging eighty-seven-and-a-half bushels of corn per acre, was harvested. This was the natural return for the ordinary processes of ploughing and hoeing.

So far, I have written only of the river bottoms, and I should fail in giving a fair description of this region of country, if I omitted all mention of the uplands.

The richness of low lands has, for many years, caused the value of the adjoining second bottom, and uplands to be disregarded, and they have generally been thrown in to the purchaser, at from one to three dollars per acre.

I will content myself, as before, with facts. Appreciating, perhaps, more than some of my neighbors the combination on a farm of a variety of soil, I proceeded, on purchasing a few years before the war, to clear some of my hill sides. On a field of about ten acres four good crops of corn have been made, and last spring I sowed this field in oats, and harvested eight heavy stacks from one, and a half of which I threshed out thirty bushels of prime quality oats. The same field is now in rye and promises well.

As I have no land to sell, and my only object in addressing the *Farmer*, is to call attention to what I consider a very desirable location for any one searching for health and plenty, I will only make one or two necessary remarks in conclusion.

The late unhappy war left its mark here as

everywhere else. The owners of some of the finest farms were ruined, or nearly so, and a settlement that promised to be (excuse the word) unique, was rudely broken up. Our lately built Episcopal Church is closed, but only waits the advent of more settlers to throw open its doors. Our new county-town of Brevard is endeavoring to recover from the fall that retarded its growth while yet in swaddling clothes, and all that is now wanting is intelligence and capital, to give our reviving settlement a push forward.

There is abundant water-power for all purposes, and one farm now, I think, on the market, has a mill building, just finished before the war, and designed for a saw mill, grist mill, and wool carding machinery combined.

Messrs. Editors, our work is all before us, and it is a great work. Let us not flinch from it. God has given us abundant material. Let not the necessary intelligent energy be wanting to become co-workers with Him in the noble effort to regenerate our now prostrate and struggling country. RUSTICUS.

Rotting of Turnips.

NEWBERN, N. C., DEC. 1, 1867.

Editor Am. Farmer:

DEAR SIR: I have recently been reading a treatise on "English farming," and find that in some particulars it might be applied with profit to the eastern part of this State. We have the finest summer pasture for cattle, sheep and hogs, but they get poor in winter, because cotton and Indian corn is the chief product of this section. The one they cannot eat, the other commands too high a price, (so the producer thinks,) and in this way stock is poor in spring, if indeed they survive until that time.

Turnips, as I read, has revolutionized husbandry in England. Man and beast fare sumptuously on them, and so it could be here, and is so for a short period.

Little attention and labor produces large yields on almost any land.

Sow them broadcast among corn on our swamp lands, and the lands will be literally acres of turnips; yet they profit us little, from the simple fact that we have not yet learned how to keep them for winter use. I have put them in dry cellars, they shrivel up, and become dry and useless before spring. I have banked them in heaps as we do sweet potatoes, and they invariably heat and rot in a very short time. The article I allude to, as having read, only teaches the cultivation; we have no difficulty on this part. It says not one word of the mode of preserving for late use. If you will inform us you will do the country service.

Root crops must, in this section, to a great extent, take the place of cereals; and, I hope, between this and spring, you will tell us something about beets, carrots and parsnips, as well as turnips. Respectfully,

H. J. B. CLARK.

We cannot speak confidently of a remedy for the difficulty mentioned by our correspondent, but will suggest that it may be met by allowing the crop to stay in the field unharvested, taking up not more than a week's supply at one time. Turnips will stand pretty hard frosts, and in the latitude of our correspondent may preserve their feeding qualities through winter. A pasture of early sown rye should be provided for spring.—ED. AM. FARMER.

Wheat Binders.

Having had occasional inquiries about Wheat Binders to operate by machinery, we addressed a line to Messrs. Emery & Co., of the *Prairie Farmer*, and, by their courtesy, have the following reply:

OFFICE OF THE PRAIRIE FARMER,

Chicago, Illinois, Dec. 8th, 1866.

Mess. Worthington & Lewis, Baltimore, Md.

DEAR SIRS: We are in receipt of yours of the 3d, and noted the same. There have been quite a number of inventions got up in the West for binding grain, to be attached to a reaping machine. The most successful machine is the invention of W. W. Burson, Rockford, Ill. This machine binds with wire, and has been quite extensively used, but is not growing rapidly in favor.

The best, and most practical machine for cutting and binding we know of, is called Marshes' Harvester. The grain is cut and carried by an endless apron, up to a platform, where two men stand and bind with straw, as on the ground. We have seen one man alone bind on the machine an acre in fifty-five minutes, leaving the field cleaner than by any seven mowers of hand raking and binding. The proprietor of this machine is J. D. Easter, Chicago, Ill.

The objection to the binders attached are various, the expense of wire or twine being one of the principal; and then the mechanism is complicated, and requires skilled hands to manage it. Yours truly,

EMERY & Co.

Lime Kilns—How to Make.

CHRISTIANSBURG, Montgomery co., Va.

DEAR SIR: Allow me to ask of you some information in regard to burning lime. I wish to try the system practiced in Pennsylvania and Maryland, of applying lime in clover sod, to improve my farm, which is a small one, well adapted to the growth of clover and other grasses, and have the finest of limestone marl at hand. What I wish to know is, how to build what is called the perpetual kiln, in which the lime, as soon as burned, is taken out below without stopping the fires. Can this kind of kiln be used with wood instead of coal? If not, can you direct me how to build a stationary kiln? By this I mean a kiln, the walls of which are built either of sandstone or of brick, that will stand fire, having flues below for the wood, and the lime to be taken out when cold. The only advantage, I presume, of this kind of kiln is, that it will burn all the stone put into it, instead of leaving a wall all round of unburned lime as in the old-fashioned kilns. J. R. G.

Will some friend do us the favour to furnish an answer to the above.—ED.

NEW BRUNSWICK, NEW JERSEY.

Please inform me whether the Scuppernong grape succeeds as far north as the latitude of Baltimore; and, if so, would it not do well in Southern New Jersey. I would like to purchase 25 Scuppernong vines, 1 or 2 years' old. Can you tell me where I can get them? I have read an article upon that grape by J. Van Buren. Is he a nurseryman?—H. K. H.

The Scuppernong does not succed so far north as the latitude of Baltimore, and the plants are not to be had here. Mr. Van Buren is an experienced nurseryman in Georgia; his post-office address we do not know.—ED.

MT. AIRY, HALIFAX CO., N. C.
December 3d, 1866.

Editor of the American Farmer:

DEAR SIR: Though somewhat late in doing so, permit me to congratulate you on the reappearance of your valuable journal, which was welcomed by all of us with unmixed pleasure. Indeed, like the fabled giant of old, it seems to have gained renewed strength from its temporary prostration.

With many apologies for the delay, for which the *state of the times* is my only justification, please see enclosed the amount of subscription. Very respect'ly, and with all good wishes,

Your friend and ob't serv't,
C. B. E.

Peach Orchards.

GENTLEMEN: You would do good service to a large interest in Maryland and Delaware, if you could publish some good, practical articles, on the management of peach orchards, particularly with reference to the prevention and cure of the yellows, which is destroying us in Cecil county.

The article in your last number, on landlord and tenant, by Mr. Davis, is good as far as it goes. The changed social condition of the State will, no doubt, much increase the class of tenants, and whilst it is of great importance to encourage in every way their improvement, something, too, should be done, to protect the interests of *landlords* against them, more especially as they outnumber and outvote the farmer, and are likely to possess, even more than now, controlling influence in legislatures and courthouses. I may, perhaps, if agreeable to you, send you something on this subject. L. S. F.

Shall be glad to hear from our correspondent on this or any other topic. Will not some friend give us the desired article on the management of peach orchards.—ED.

From a lady friend of the "Farmer," Cecil Co., Md.

Editor of the American Farmer.

DEAR SIR: My heart indited a letter of warm welcome to the "Farmer," upon its first appearance after its long, sad absence; but the "thief of time," whose hold grows stronger upon me as I advance in years, has prevented my clothing thought in words. Believe me, you will always be, as you have always been, a most welcome visitor. I enclose two dollars for one year's subscription, for Mrs. ....., Wilson's Depot, Crimea P. O., South Side Railroad, Dinwiddie county, Va.; a dear friend who has suffered greatly by this wicked war, and two for ourselves; the beginning of a subscription never again, I hope, to be interrupted.

With best wishes for your success in this and every undertaking, I am yours, very truly.

Lime on Wheat.

November 7, 1866.

MESSRS. EDITORS: You will please tell me, through the old time-honoured *American Farmer*, what you think of giving a wheat field, which was a heavy clover fallow, a dressing of lime. I have an idea of applying it through the winter. The next crop will be corn. My mode of farming is four fields. I commenced the four field system about fifteen years ago; before that time I had but two fields, wheat and oats, after corn, and very little made of either. In 1840 I be-

came a subscriber to the *American Farmer*, and through its instruction, I have made my farm produce more than five times as much as it did before. You will also tell us how to make cheese, for we have been Yankeeized, and we will have to learn all the small things, even to the wooden nutmeg business. Yours, resp'tfully.

There can be no objection to putting on lime as proposed by the writer, if done when the ground is firm. It may not materially benefit the crop of wheat, but will be just right for the coming crop of corn.—Ed. Far.

Care of Long-Wooled Sheep.—Experienced breeders of Cotswold and Leicester sheep say that these sheep should not be kept in the same pasture with Merino sheep. They say that the odor from the bodies of the Merino is not only offensive, but hurtful to the English breeds. The long-wooled sheep are little disposed to roam over the pastures; they eat what they want, and then lie down. The Merinos, on the other hand, are much disposed to ramble all over the pasture, picking a little here and there. The consequent trampling of the grass, and scattering of the droppings of the sheep, seem to effect unfavorably the Cotswolds and Leicesters, so much so that it is advised, even where they are kept alone, that at least three pasture lots be kept, so that the sheep may have fresh pasture frequently.

Canadian farmers, who think highly of the long-wools, claim that the prejudice which exists against them in many parts of the United States, is owing to this mismanagement of those who own them.

Cashmere Goats.—Mr. J. B. Akin sold a pair of beautiful, pure blooded Cashmere goats to Mr. Green Jones, of Lincoln county, a few days ago. The large quantity of cashmere goods now worn, and the high price these goods command, and the erection of factories in the United States for their manufacture, is an indication that the intrinsic value of the Cashmere goat is appreciated. Our fine cashmere shawls, cashmere trimmings used by ladies for mantillas, dresses, &c., are made of the wool of these animals. They are superior in almost every respect to sheep. They require but little care, are secure from attack of dogs. We would advise our farmers to look to their interest, and secure some of this stock.—*Danville Advocate.*

In this connection we will state that Mr. Jas. G. Colmesnil, near Shepherdsville, Ky., will furnish a few half breed Cashmere kids at reasonable prices, if application is made before Christmas.

Compounding Manures.

There is no soil so fertile, naturally, as not to be improvable by the application of some extraneous substance. The best constituted soils, when chemically examined, exhibited some deficiencies. These are quite prominent and obvious in their character, and are supplied by the addition of some of the primitive earths, as sand, clay or lime, or by the admixture of vegetable animal organisms which are in fact composed of each.

When manure is to be made from various materials, we should endeavor to ascertain whether it is required that the base should be silicious, argillacious, or calcareous; if the former, sand must be the principal ingredients used; if either of the latter, lime or clay. This fact ascertained, a sufficiency of the requisite article should be obtained and duly prepared, and the work commenced. All green vegetables, and all substances, whether vegetable or animal, as well as many mineral matters, come in here to aid and assist us. The mould which reposes beneath the forest; the dark muck that is exposed in the beds of ponds and lakelets; the refuse vegetable productions, and the decomposable substances which are presented everywhere, are all adapted to the purpose of making manure.

Having spread your basis material on the surface of the soil, in a convenient place, say six inches deep, spread over it a stratum of forest mould, muck or other material proper for such use, and so on till the heap is finished. When a large number of ingredients are made use of, it will be well to mix them together in order that the perfected article may possess as homogeneous a character as possible, as well as to facilitate the operation of composing it. When the mass has remained for several weeks, it will be in a condition to be turned, or "cut down," a process performed by commencing at one side, and, beginning at the top, cut clean down through the strata, with a shovel, and throwing the material into a heap, where it is allowed to remain for an equal period of time undisturbed, to mascerate and decompose. When the compost is designed to be used on sandy lands, the percentage of clay in compost intended for its permanent amelioration, should not be less than fifty or sixty parts of the entire mass, and in cases where the sandy constituents greatly preponderate over the others, the percentage of clay should be even greater than this. The more complete the admixture of the components is, the more efficient as well as more immediate will its action be on the crop. When such materials are mixed, fermentation to a greater or less extent, alway-

takes place; the heating of the mass breaks up the physical texture of the materials, and the play of chemical affinities induced thereby, and constantly going on in the mass, tends to solve and prepare the same for the use to which it is ultimately to be applied.

Of the almost infinite variety of materials used in composting operations, there are few which require any previous preparation; they are all of a character rendering their immediate addition to the mass of other ingredients practicable, and when so added the chemical changes they experience, gives them the conformation demanded for the exertion of their powers both upon the soil and crop.

Muck is often found to contain an acid principle which is easily corrected by the alkalescent matter in the other ingredients, or by the fermenting process which is engendered thereby. The other ingredients of a purely or semi-vegetable character, decompose readily under the chemical influences to which they are exposed, and become homogenous and soluble in a high degree.

No substance is perhaps more conducive to the health and rapid development of vegetation than good compost. It is almost invariably much more pure than simple animal excrement, contains a greater number of the essential elements of vegetable nutrition, as well as a more liberal quantity of those mineral matters which act mechanically on the improvement of the soil.

In all cases where much crude vegetable matter is used in composing, a considerable quantity of caustic lime will be required, not only to accelerate decomposition, but to neutralize the native acids they contain, often in large quantities, and which are in their nature uncongenial to the life of plants. Muck that has been formed by submarine action or decomposition is almost invariably impregnated with an acid principle which, if not corrected, will be found highly detrimental to vegetable growth. Most of the plants belonging to the lower orders of vegetation, require to be thoroughly decomposed before they can be rendered available as a manure, and this, where there is not a powerful fermentation in the mass, is, as a result, often found to be attended with considerable difficulty, unless assisted by the decomposing action of lime.

In forming composts from green vegetable substance of all kinds, sulphuric acid should be freely used. Sprinkling the heaps daily with a gill of acid diluted with two thousand times that quantity of water, will add greatly to the efficiency of the compost by absorbing and fixing the ammonia and carbonic acid which are always copiously evolved during the process or decomposition by all kinds of manure.—*Gem. Tel.*

Stone for Stable Floors.

The use of stone in the construction of floors for stables, we believe, is not common in America, at least not in the central counties. We found them in universal use abroad, and they presented quite a marked feature in contrast with the plank floors which are so common with us. In some of the best stables both for cattle and horses, cobble stones are bedded into the earth in a similar way that pavements are made in the cities. At first they looked as if they might be uncomfortable, especially for horses, but we were assured no bad results followed from their use, and the uneven surface was regarded as an advantage, as it served as a preventive to the animals slipping. Immediately back of the animals the floors are made to descend, forming a curved ditch or alley for conducting the urine. In looking at these stables, the thought often occurred whether similar structures could not be profitably introduced with us. The first cost may, perhaps, be a little more than plank, but in the long run they are infinitely cheaper. There is another advantage—the saving of room and the prevention of accumulated filth underneath the floor, quite common where plank is used.

An objection might be urged, that in our cold climate stone floors are liable to become frosty, thereby rendering cattle uncomfortable and proving injurious; but in properly-constructed stables it is doubtful whether any inconvenience would result from this source. Being lower down than plank, and upon the ground, there would be less exposure to winds and cold from beneath, and when timbers were properly underpinned with wall, the heat from the cattle must prevent freezing in all ordinary winter weather.

At Alderman Mechi's farm near London, the stables for cattle have floors composed of slats not quite two inches apart, the slats being three inches thick and four inches wide. Below this floor is a tank built of brick and cemented watertight for the reception of the manures, both liquid and solid. The tank which is some three feet deep, has a bottom that slopes toward the centre, and is connected with pipes to the large cistern outside, and from time to time water is let in to liquify its contents, so as to be conducted off in the cistern referred to. From this reservoir the liquid is forced by steam through different parts of the farm and the crops irrigated.

Under the system of irrigation adopted by Mr. Mechi, grand results have been obtained, but

this plan of floor is more adapted to his peculiar system of husbanding manures.

Slatted floors, however, as a matter of convenience, could be adopted with good results in hog-pens, and also for young calves in spring, which must be stabled until the weather is warm enough to turn them out. In both cases they would serve the purpose of keeping the animals dry and clean, a consideration which adds greatly to their thrift. In raising calves, every one must have observed how difficult it is to keep the stables dry, requiring constant attention, in change of bedding, which soon becomes foul. With slatted floors and conveniences for removing the manure below from time to time, would not only lessen labour out by the use of muck or other absorbents to take up the liquid as it passes through the slats, would add considerable to the compost heap. For hogs Mr. Mechi's slats are three inches wide, and one-and-a-quarter inches apart. For calves, two inches thick, three wide, and one-and-five-eighths apart.

We saw floors in England that had been in use an hundred years with little or no repairs, and which were likely to last one hundred years more. The time will come when stone floors in many parts of our country will become a necessity, and it is a question whether their adoption upon farms where stone may conveniently be had would not now be far more economical than wood.—*Utica Herald.*

English National Horse Show Association.—It is proposed to establish a Grand National Horse Show Association, holding its shows annually in the city of Hereford. The Hereford Times says:

Even such an exhibition as that afforded by the Bath and West of England Society, is tame and insipid compared with the incidences of a horse show, as we have now come to interpret the term, viz: a show in which the horses are exercised in what we may call their "trades;" that is, the hunter crossing the country, taking "bullfinches," gates, water leaps, and such other obstruction as come in the way of the huntsmen; the hack, well mounted and showing his stepping powers, whether his *calibre* be that of a 16-hander, a cob, a pony, or for carrying a lady; the harness horse driven in harness, and proving the style in which he can do his ten or twelve miles an hour, without any risk of coming "down." These are what we now regard as the leading elements of a horse show, and it is such a show that the promoters of the Grand National Association are desirous of establishing in Hereford.

Alsike Clover.

Mr. Chauncey Miller, of the Shaker Family, near Albany, furnishes us the following statement of his experience with this plant for the *Country Gentleman:*

We find the Alsike Clover a very superior grass in the following plants:

1. For its value as a hay crop, on a great variety of soils, being of a growth, in height, varying according to quality of soil, from ten inches to two-and-a-half feet, and yielding from one-and-a-half to three tons per acre, according to soil; thus comparing with our best red clovers, though, of course, not so high as the great western pea vine clover, but, with us, one-third higher than the small, southern red clover.

2. For fineness of stalk, or haulm.

3. For its multitude of sweet flowers, blooming, perhaps, three or four times as much as red clover, making, when in bloom, literally "a sea of flowers."

4. Its adaptation to heavy soils, clays or heavy clay loams, as well as sandy soils, not being so liable to heave out by frosts in winter and spring, as red clover, on account of the root being more fibrous, partaking somewhat of the character of the white clover, (trifolium repens,) being the product of a cross between the red and white clovers originated in Germany.

5. To all farmers who keep bees largely, the crop would be of great value, as bees can work upon the flowers equally as well as upon white clover, as they are about the same size, and precisely the same habit, as the latter, but are much more abundant in honey; bees appear as fond of the flowers as of mignonette, and, in its season of flowering, which lasts about six weeks, are continually upon it, from dewy morn until dusky eve.

6. To those farmers raising clover seed for market, the Alsike clover, in our opinion, would be of great value, as it seeds enormously, and the seed threshes easily, by flail or machine, leaving a beautiful quality of hay, the stalks retaining their greenness, when most of the seed is quite ripe.

7. It holds many weeks in bloom, thus giving the farmer lee-way of time and weather, in regard to securing the crop.

In the past the three years we have spent about sixty dollars for Alsike clover seed to sow upon our lands; we have tried it upon a variety of soils. We like it so well, that should all circumstances favor the enterprise, we think of seeding, next spring, in considerable quantity to this grass, and, if practicable, it is possible we may import pure seed from Germany for that purpose,

not raising enough of our own seed to sow; as we find, on trial, that much of the seed of this plant, which has been imported into this country, other than through the Patent Office Department, has been largely adulterated with other clovers, daisy, &c., &c., either before or after entering this country; possibly *we* may not be able to obtain *pure*, even in Germany, but we hope to do so. We mention this incidentally, as much futile inquiry has been made by farmers, aparians and seedsmen, where pure seed could be obtained, and we fear it is to be obtained only in Germany. A party in Vermont has affected to distribute much Alsike clover seed to aparians within the past three years, five dollars worth of which we tried, and found it did not contain one-thousandth part of Alsike clover seed, but was quite pure white clover seed.

Again, we would say to farmers that we have found it to be necessary, in order to be sure of seed, to order it in the fall, or early winter, as the demand is generally such that it is all sold off before sowing time in the spring. If we are successful in sowing in larger quantity, we will again report, and we propose to try it on a greater variety of soils.

☞The following remarks on the advantages of book-keeping, are from the *Phrenological Journal:*

"If the internal revenue shall cause farmers, manufacturers, *all* classes to 'keep accounts' of incomes and outgoes, and for what, we think it will be worth millions to the country. The present 'slip-shod manner' with many is ruinous. How few there are who know exactly how they stand—whether they are gaining or losing! and how almost universal is the habit of crying 'hard times,' when, if the great leaks were stopped, all would go well and each have plenty. One 'saves at the spigot and wastes at the bunghole,' and for want of accurate accounts seems insensible as to the causes of his being forever 'short of means' to carry on his work. Another becomes thrifty and forehanded by careful attention to his accounts. Every man ought to have his business so clearly recorded that he can tell in a moment to a fraction exactly what he is worth, what he is making or losing on each particular item, be it grain, fruits, flesh, or other productions. But how few there are who do it. If the book under notice will serve to systematize this thing; if it will enable and induce men to keep accounts, it will, we repeat, be worth millions to our country in dollars; and that which money cannot buy, namely, that peace of mind which results from a perfect knowledge of our affairs."

THE WOOL CROP OF CALIFORNIA, for 1866, so far marketed, is about 5,000,000 pounds, of which 3,000,000 pounds have been purchased for the mills in San Francisco, and the balance exported to the Atlantic States. Oregon this year produced not far from 1,800,000 pounds of wool, 1,100,000 pounds being taken by her woolen mills, 300,000 by San Francisco mills, and the balance exported. The wool used by the Pacific coast mills varies in value from sixteen to twenty-seven cents per pound. Oregon wool being cleaner and of finer quality, brings the highest price. California wool loses about fifty-five per cent., and Oregon forty per cent. in cleaning.

☞The Cotton Planters' Asso. of Georgia met at Milledgeville a few days ago. The following named officers were elected for the ensuing year: B. C. Yancey, of Clark, President; B. B. Moore, of Thomas, 1st Vice-President; J. B. Jones, of Burke, 2d Vice President; T. J. Smith, of Hancock, Treasurer, and Capt. H. L. French, of Schley, Secretary. A resolution was adopted providing for the introduction of a bill in the Legislature to change the name of the body from "Cotton Planters' Association" to "The Agricultural and Manufacturing Association of the State of Georgia."

THE COTTON CROP.—We have very good reason to believe that in Maury county there never was before raised in one year as much cotton as has been grown this year. Some large farmers may have raised more in other times, but there never was a season when so many acres in the county were devoted to cotton. Every farm in the county almost has a patch of cotton on it this year. As a happy result, everybody that now farms, is getting in a little money, and the merchants are selling goods, and trade generally is brightening up. The depression in the cotton market, however, is disappointing everybody very sadly.—*Columbia (Tenn.) Gazette.*

☞A new and fatal disease is killing the hogs in Fleming county, Kentucky. Mr. D. Johnson has lost one hundred and forty-eight hogs by what he calls diptheria. He says he examined them very closely, and found a yellow thick substance around the windpipe, and nothing wrong with their entrails. They run a bloody substance from their ears and nose. He foots up his loss in hogs at over one thousand dollars.—*Danville Advocate.*

Sunday Reading.

Religion is a generous and noble thing in regard to its progress; it is perpetually carrying on that mind, in which it is once seated, towards perfection. Though the first appearance of it upon the souls of good men may be but as the wings of the morning, spreading themselves upon the mountains, yet it is still rising higher and higher upon them, chasing away all the filthy mists and vapors of sin and wickedness before it, till it arrives to its meridian altitude. There is the strength and force of the Divinity in it; and though, when it first enters into the minds of men, it may seem to be "sown in weakness," yet it will raise itself "in power." As CHRIST was in His *bodily appearance*, He was still *increasing in wisdom and stature, and favor with* GOD *and man*, until He was perfected in glory; so is He also in His *spiritual appearance* in the souls of men; and accordingly the New Testament does more than once distinguish, of CHRIST, in His several ages and degrees of growth in the souls of all true christians.

As in the first institution of nature, and the propagation of corporeal essences, it was enacted und yet continues, that "every thing should bring forth fruit, after his kind;" so I find it in the propagation of virtue and vice; they bring forth fruit "after their kind." Virtue begets virtue, vice begets vice. And it is as natural for a man to expect a return of virtue out of virtue, and a return of vice out of vice, as it is for him to expect an elephant should beget an elephant, or a serpent a serpent. Nay, not only the *germs* but the very *species* holds, and oftentimes the proportion of that *species* too. . . . He that sows iniquity must look to reap it. Did not David's murder and adultery bring the sword and incest into his family?

Our LORD sanctified every age of life by His own susception of it and similitude to it; for He came to save all people through His own person; all, I say, who, by Him, are born again unto God—infants, boys, children, young men and old. Made an infant, He sanctified the state of infancy; and being Himself a child, He sanctified the state of childhood.

It is fit that the Word, being more precious than gold, yea, than much fine gold, a priceless pearl, should not be laid up in the porter's lodge, the outward ear, but even in the cabinet of the mind.

The soul of the true Israelite is as, "a garden by the river's side," not only lowly and situate where she may have the advantage of springs and rivers as well as rain from heaven, (i. e., all the means of grace,) but be well fenced and enclosed, both by the discipline and the orders of the church, and the conseqent favor and protection of Providence. . . . Her verdure is conspicuous and ever constant; whether in the summer of prosperity or the winter of adversity, her actions and principles are ever upright and fair; her hopes and affections and desires are ever ascending towards the noblest and most sublime objects, the things that are above, the glorious things of heaven. . . . . The deeper the soul is rooted in humility and grace, the higher will its affections ascend towards heaven, and the wider its branches of charity extend towards men.

How many *thanks* and praises do we owe unto Him for this our salvation, wrought by His dear and only SON CHRIST! who became a pilgrim on earth to make us citizens in heaven; who became the Son of man to make us the sons of GOD; who became obedient unto the law to deliver us from the curse of the law; who became poor to make us rich; vile to make us precious; subject to death to make us his forever! What greater love could we silly creatures desire or wish to have at God's hands? . . . Therefore, let us confess Him with our mouths, praise Him with our tongues, believe on Him with our hearts, and glorify Him with our good works.

Can we think that Holy Scripture thus tells us of the sacred childhood of Jesus, and means us not to reverence childhood? Feel we not (at least if we be not deadened by this world's vanities) a drawing forth of our inmost hearts towards them, a tender love, a reverence for them, which, alas! we cannot have for ourselves, and often not for others of riper years?

Good men are always walking on from strength to strength, till at last they see God in Zion.—Religion, though it hath its infancy, yet it hath no old age: while it is in its minority, it is always *in motu;* but when it comes to its maturity it will always be *in quiete;* it is then "always the same, and its years fail not, but it shall endure for ever."

The empyrean heaven saved not the angels, who in that heaven committed sin. The terrestrial Paradise saved not Adam, who in that Paradise committed sin. And dost thou presume to hope in the church for impunity of those evils, which in the church you perpetrate?

Baltimore Markets, Dec. 22.

COFFEE.—Rio, 18¼a19¼c. gold, according to quality. Laguayra ——, and Java —— cts. gold.

COTTON.—We quote prices as follows, viz:

Grades.	*Upland.*	*Gulf.*
Ordinary	27	—
Good do	29	—
Low Middling	31	—
Middling	35	—

FERTILIZERS.—Peruvian Guano, $80; Reese & Co's. Soluble Pacific Guano, $65; Flour of Bone, $60; G. Ober's (Kettlewells) AA Manipulated, $70; A do., $60; Ammoniated Alkaline Phosphate, $55; Alkaline Phosphate, $45; Baltimore City Company's Fertilizer, $40; do., Flour of Bone, $60; do., Ground Bone, $45; do., Poudrette, $20; Baugh's Raw-bone Phosphate, $56;—all per ton of 2,000 lbs.; Pure Ground Plaster, $13.50a$14.00 per ton. Shell Lime, slacked, 6c., unslacked, 10c. per bushel.

FISH.—*Mackerel.*—No. 1, $19a20; No. 2, $18a19; large, No. 3, $14.50a15. *Herrings* —Labrador, $6.50a7.50; Potomac and Susqueh'na, $8.50a9; Codfish, new, $7a$7.50.

Corn.—White, $1.00a$1,05; Yellow, $1.05a$1.08 per bushel.

FLOUR.—Howard Street Super and Cut Extra, $11a $11.55; Family, $15.50a16.00; City Mills Super, $10.50a 11; Baltimore Family, $17.50.

Rye Flour and Corn Meal.—Rye Flour, new, $6.25a 6.50; Corn Meal, $5a6.00.

GRAIN.—*Wheat.*—Good to prime Red, $3.15a3.30; Choice White—good to prime, $3.25a$3.40 per bushel.

Rye.—$1.25 per bushel.

Oats —Heavy to light—ranging as to character from 57 a62c. per bushel.

HAY AND STRAW.—Timothy $26a28, and Rye Straw $28 per ton.

BEANS.—$3.50a3 75 as to quality.

POTATOES.—$4.00a4.25 per bbl.

PROVISIONS.—*Bacon.*—Shoulders, 12a13 cts.; Sides, a2a13; Hams, plain bagged, 19 cts.; sugar cured, 20 cts. per lb.

SALT.—Liverpool Ground Alum, $2.15a2.20; Fine, $3.10 13.25; Turk's Island, 62½c. per bushel.

SEEDS.—Clover, held at $9.25; Timothy, $3.50a3.62; Flaxseed, $2 90.

TOBACCO.—We give the range of prices as follows:

Maryland.	
Frosted to common	$2.50a 3.00
Sound common	3.50a 4.00
Middling	6.00a 8.00
Good to fine brown	10.00a15.00
Fancy	17.00a25 00
Upper country	3.00a30.00
Ground leaves, new	3.00a5.00
Ohio.	
Inferior to good common	4.00a 6.00
Brown and spangled	7.00a12.00
Good and fine red and spangled	13.00a17.00
Fine yellow and fancy	20.00a30.00

WHISKEY—$2.30a2.35 per gallon, in barrels.

WOOL.—We quote: Unwashed, 25a27 cts. per lb.; Tub-washed, 45a57 cts.; Fleece, common, 40a48 cts.; Pulled, No. 1, 27a32 cts.; Merino, 35a37 cts.

CATTLE MARKET.—Common, $5.00a$6; Good, $6.50a $6.75. Prime Beeves, $7.50a8.00 per 100 lbs.

Sheep—4½a6 cents per lb. gross.

Hogs—$8.75a9.50 per 100 lbs., net.

Wholesale Produce Market.

Prepared for the American Farmer by ELLICOTT & HEWES, *Produce and Commission Merchants, 67 Exchange Place.*

BALTIMORE, Dec. 22, 1866.

BUTTER.—Ohio, in brls. and kegs, solid packed, 20 to 25 cts.; Roll, 35; Virginia and Pennsylvania in kegs and tubs, 20 to 25; Glades, 30a45; Goshen, 45.

BEESWAX—45 cts.

CHEESE.—Eastern, 18; Western, 16.

DRIED FRUIT.—Apples, 10; Peaches, 17.

EGGS—In barrels, 35 cents per dozen.

FEATHERS—75 cents for good Southern.

LARD.—Brls. 14, kegs 15, jars and other country packages 16 cents.

TALLOW.—11¼ cents.

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☞ We direct the attention of our readers, particularly those who are troubled with the high price of cigars, to the advertisement, in another column, of the "National Cigar Machine." The machine will be sent prepaid to any address on receipt of $3, and will, no doubt if purchased, save you many a dollar in the course of a year.